APPENDIX A:
NOP AND SCOPING COMMENTS, AND INITIAL STUDY



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John A. Bowes, Ed.D.
Superintendent of Schools

Dawnalyn Murakawa-Leopard, Ed.D.
Deputy Superintendent

Board of Trustees

Jen Dohner
Jen Fenton
Cathey Graves
Tina Shivpuri
Wysh Weinstein

Manhattan Beach Unified School District

325 South Peck Avenue • Manhattan Beach • California 90266 • (310) 318-7345 • FAX (310) 303-3822

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT AND NOTICE OF PUBLIC SCOPING MEETING FOR THE MIRA COSTA HIGH SCHOOL FIELD RENOVATION, LIGHTING IMPROVEMENT, AND FACILITIES MASTER PLAN PROJECT

TO: Agencies, Organizations, and Interested Parties

FROM: Manhattan Beach Unified School District
325 South Peck Avenue
Manhattan Beach, CA 90266

SUBJECT: Mira Costa High School Field Renovation, Lighting Improvement, and Facilities Master Plan Project—Notice of Preparation of a Draft Environmental Impact Report in Compliance with Title 14, Section 15082(a) of the California Code of Regulations

Pursuant to Public Resources Code Section 21165 and the Guidelines for the California Environmental Quality Act (CEQA) Section 15050, the Manhattan Beach Unified School District (District) is the lead agency responsible for preparation of an environmental impact report (EIR) addressing potential impacts associated with the project identified herein.

AGENCIES: The purpose of this document is to serve as a Notice of Preparation (NOP) of an EIR pursuant to the CEQA Guidelines Section 15082 and solicit comments and suggestions regarding the scope and content of the EIR to be prepared for the proposed project. Specifically, the District requests input on the environmental information germane to your agency's statutory responsibility in connection with the proposed project. Your agency may rely on the EIR prepared by the District when considering permits or other approvals for this project.

ORGANIZATIONS AND INTERESTED PARTIES: The District requests your comments and concerns regarding the proposed scope and content of the environmental information to be included in the EIR.

PROJECT TITLE: Mira Costa High School Field Renovation, Lighting Improvements, and Facilities Master Plan Project

PROJECT LOCATION: The Mira Costa High School campus is at 1401 Artesia Boulevard (Assessor's Parcel Number 4168-002-906) in the City of Manhattan Beach. The project site is bounded by Artesia Boulevard to the south, S. Peck Avenue to the east, S. Meadows Avenue to the west, and residential homes and the Manhattan Beach Unified School District building to the north. The campus is mainly surrounded by residential neighborhoods to the north, south, east, and west (see Figure 1, Project Location).

PROJECT DESCRIPTION: The proposed project would replace existing field lights at the Waller Football Stadium in the northeast quadrant of the campus; install new field lights at the West Field in the northwest quadrant of the campus; and install new field lights on the softball/baseball fields in the southwest quadrant of the campus. The project would also include the installation of two e-bike parking areas and improvements identified in the District's

Mira Costa High School Facilities Master Plan, which include demolition, new construction, modernization, and renovation of buildings and facilities on campus (see Figure 2, Facilities Master Plan).

POTENTIAL ENVIRONMENTAL EFFECTS: Potentially significant environmental impacts associated with the proposed project could include aesthetics, air quality, cultural resources, geology and soils, noise, transportation, and tribal cultural resources. These topics will be addressed in the EIR. In addition, the EIR will describe and evaluate project alternatives that may reduce or avoid any identified significant adverse impacts of the project. Topics that are found to not have a significant impact include agriculture and forestry, biological resources, energy, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, utilities and service systems, and wildfire. Topics found to not have a significant impact are evaluated in the Initial Study.

PUBLIC REVIEW PERIOD: This NOP is available for public review and comment pursuant to California Code of Regulations, Title 14, Section 15082(b). Comments must be submitted within 30 days of receipt. The NOP is available for a 30-day public review period beginning September 22, 2025, and ending October, 21, 2025. The NOP and Initial Study are available online at https://www.mbusd.org/apps/pages/index.jsp?uREC_ID=141534&type=d&pREC_ID=2702259 and in hard copy at:

Manhattan Beach Unified School District
325 South Peck Avenue
Manhattan Beach, CA 90266

SCOPING MEETING: As a part of the NOP process, the District will conduct a public scoping meeting to present the proposed project and environmental process and to receive public comments and suggestions regarding the proposed project. All interested parties are invited to attend the scoping meeting to assist in identifying issues to be addressed in the Draft EIR. The scoping meeting will involve a presentation about the proposed project, the environmental review process, and schedule. After the presentation, public comments will be accepted either orally or in writing. The scoping meeting will be held at the following date and time:

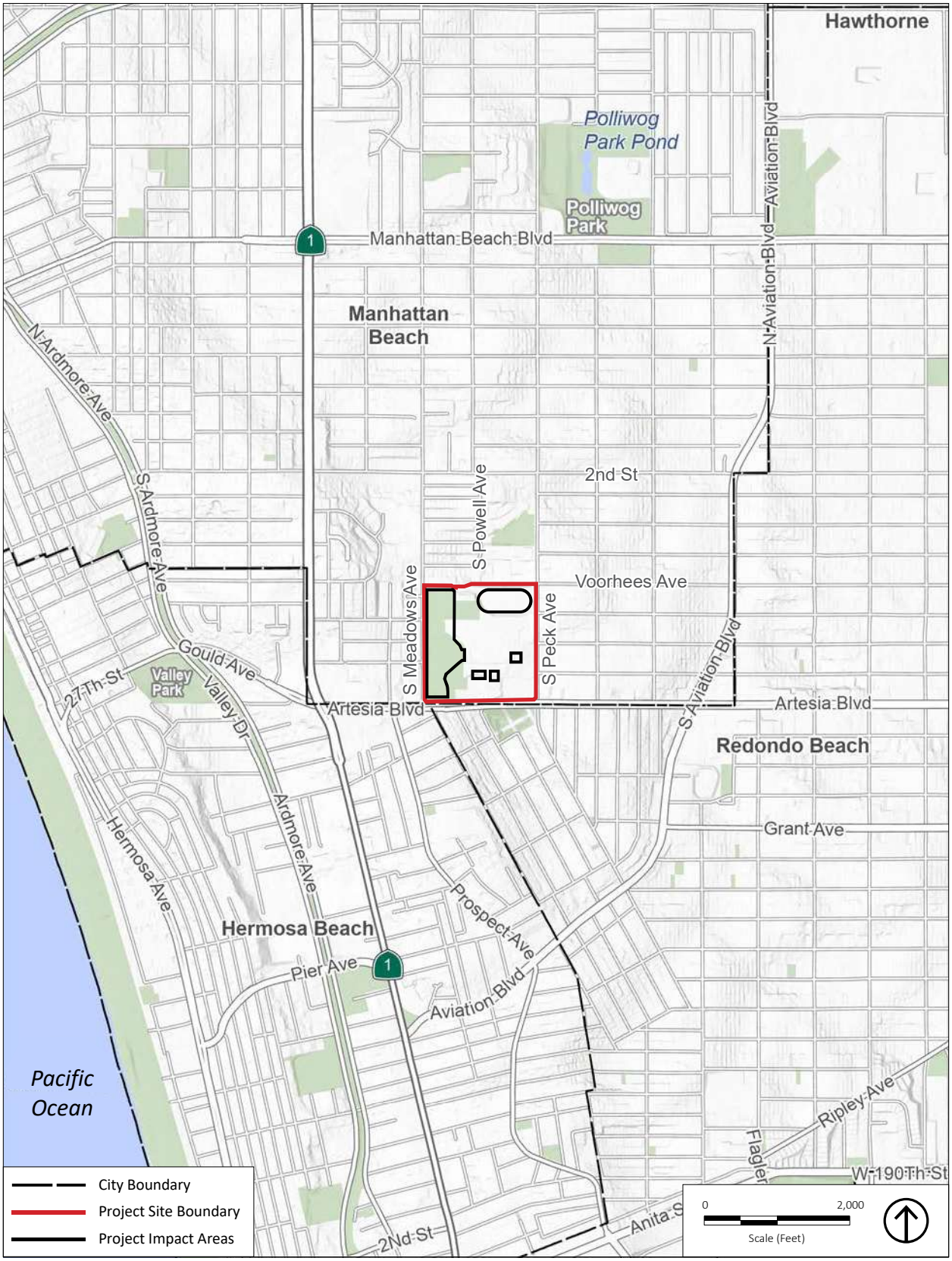
Meeting Information
Location: Manhattan Beach Unified School District Board Room
325 S. Peck Avenue Manhattan Beach, CA 90266
Date: October 6, 2025
Time: 6:00 p.m. to 7:00 p.m.

RESPONSES AND COMMENTS: The District will accept written comments only during the aforementioned public review period ending on October 21, 2025, at 7:00 p.m. Comments must be submitted via letter or email to the contact below. Comments made via other means, including social media, or delivered to other recipients, will not be accepted or considered. Respondents and commenters should indicate a contact person for your agency or organization and send your written comments to:

Attn: Dawnalyn Murakawa-Leopard, Deputy Superintendent
Manhattan Beach Unified School District
325 South Peck Avenue
Manhattan Beach, CA 90266
Ph: (310) 318.7345
dmurakawa@mbusd.org

Attachments:

Figure 1, Project Location
Figure 2, Facilities Master Plan



Source: Generated using ArcMap 2025.

Figure 1
Project Location

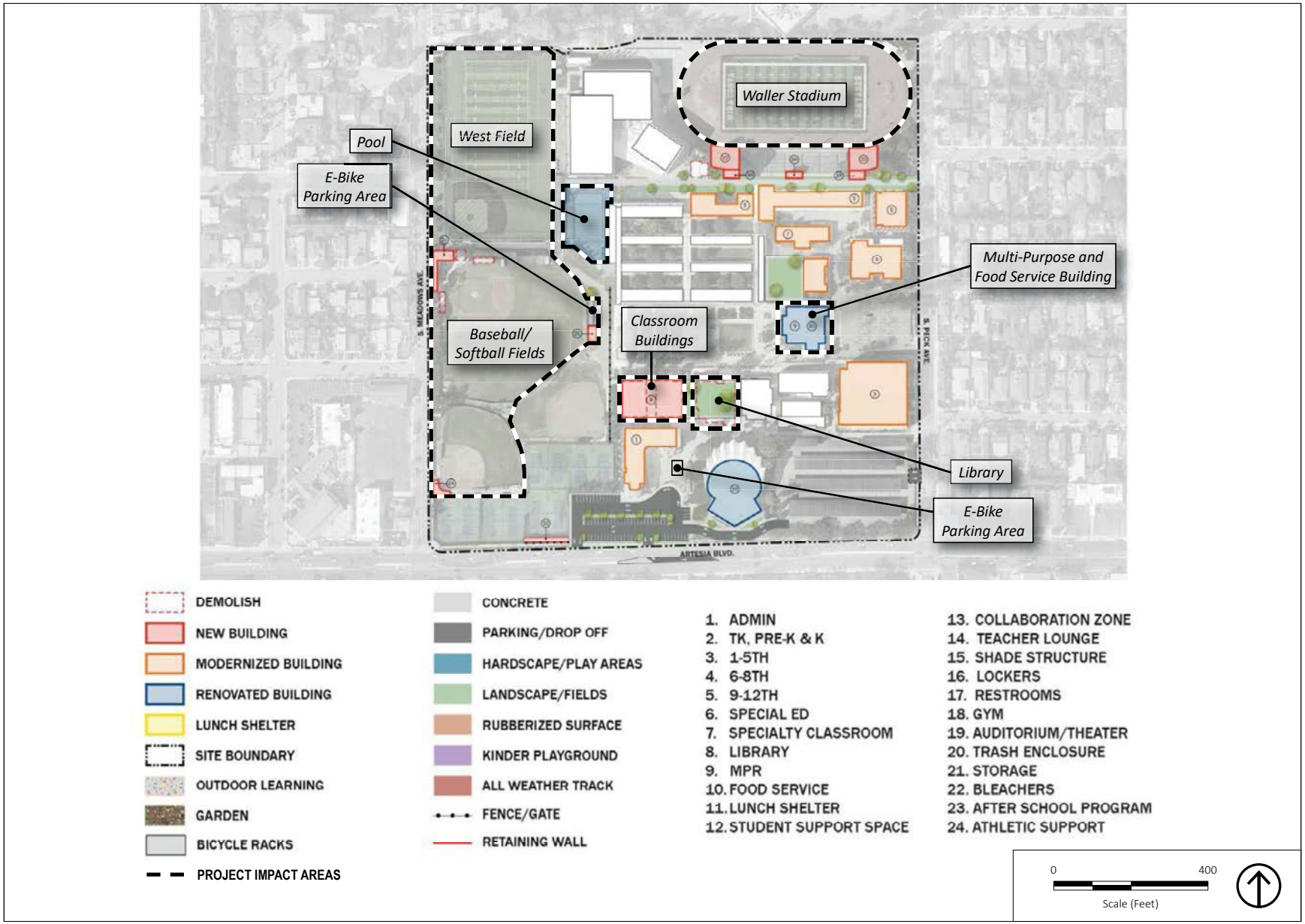


Figure 2
Facilities Master Plan

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

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Stanley Rodriguez
Kumeyaay

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Bennae Calac
Pauma-Yuima Band of Luiseño Indians

COMMISSIONER
Vacant

COMMISSIONER
Vacant

ACTING EXECUTIVE SECRETARY
Michelle Carr

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

September 22, 2025

Dawnalyn Murakawa-Leopard
Manhattan Beach Unified School District
325 South Peck Avenue
Manhattan Beach CA 90266

Re 2025090918 Mira Costa High School Field Renovation, Lighting Improvement, and Facilities Master Plan Project, Los Angeles County

Dear Ms. Murakawa-Leopard:

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

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

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

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

AB 52

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

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

a. A brief description of the project.

b. The lead agency contact information.

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

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

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

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

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

a. Alternatives to the project.

b. Recommended mitigation measures.

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

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

a. Type of environmental review necessary.

b. Significance of the tribal cultural resources.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

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

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

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

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

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

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

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

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

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

SB 18

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

Some of SB 18's provisions include:

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

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

NAHC Recommendations for Cultural Resources Assessments

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

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@NAHC.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

From: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Date: Monday, October 20, 2025 at 4:46 PM
To: "Schumacher, Scott" <Scott.Schumacher@nmrk.com>
Cc: Kiara Torres <KTorres@mbusd.org>, Hibah Samad <HSamad@mbusd.org>, "Alan.Rice@nbcuni.com" <Alan.Rice@nbcuni.com>, John Allen <jallen023@gmail.com>
Subject: Re: [External] Update: Lighting and Measure RLS Projects at Mira Costa High School

Hi, Scott

Yes, we will consider existing lighting levels as part of the analysis, and we will include this additional question in the record along with your previous comments/questions.

Sincerely,

Dawnalyn Murakawa-Leopard

Dawnalyn Murakawa-Leopard, EdD

Deputy Superintendent

Manhattan Beach Unified School District

325 South Peck Avenue

Manhattan Beach, CA 90266

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310.318.7345 x5943

310.303.3823 (FAX)

MANHATTAN BEACH UNIFIED SCHOOL DISTRICT E-MAIL DISCLAIMER. THIS COMMUNICATION AND ANY DOCUMENTS, FILES, OR PREVIOUS E-MAIL MESSAGES ATTACHED TO IT CONSTITUTE AN ELECTRONIC COMMUNICATION WITHIN THE SCOPE OF

THE ELECTRONIC COMMUNICATION PRIVACY ACT, 18 USCA 2510. THIS COMMUNICATION MAY CONTAIN NON-PUBLIC, CONFIDENTIAL, OR LEGALLY PRIVILEGED INFORMATION INTENDED FOR THE SOLE USE OF THE DESIGNATED RECIPIENT(S). THE UNLAWFUL INTERCEPTION, USE OR DISCLOSURE OF SUCH INFORMATION IS STRICTLY PROHIBITED UNDER 18 USCA 2511 AND ANY APPLICABLE LAWS.

From: "Schumacher, Scott" <Scott.Schumacher@nmrk.com>
Date: Monday, October 13, 2025 at 9:19 AM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Cc: Kiara Torres <KTorres@mbusd.org>, Hibah Samad <HSamad@mbusd.org>, "Alan.Rice@nbcuni.com" <Alan.Rice@nbcuni.com>, John Allen <jallen023@gmail.com>
Subject: RE: [External] Update: Lighting and Measure RLS Projects at Mira Costa High School

Thanks Dawnalyn. My only remaining question at this time is: Will the lighting study compare the existing lighting levels with the new proposed lighting levels? Thanks.

Scott Schumacher

Senior Managing Director

Investment Sales - Capital Markets

NEWMARK

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RE License #01078450

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Licensed Real Estate Broker

From: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Sent: Monday, October 13, 2025 9:00 AM
To: Schumacher, Scott <Scott.Schumacher@nmrk.com>
Cc: Kiara Torres <KTorres@mbusd.org>; Hibah Samad <HSamad@mbusd.org>
Subject: Re: [External] Update: Lighting and Measure RLS Projects at Mira Costa High School

Dear Mr. Schumacher

Thanks very much for submitting your questions and for your patience. We will record and file these as a comment letter received during the scoping period. To provide responses to the questions as we can:

- Can you confirm that only four of the existing eight lighting poles will be receiving new lighting?

At Waller Stadium, the 8 existing poles and all existing lighting on those poles will be removed and 4 new poles will be installed with new lights.

- Has there been a study or documentation of the existing lighting illumination levels compared to what is being proposed?

A lighting study is being prepared that will analyze all lighting levels associated with the project. The lighting study will be included as an appendix to the Draft Environmental Impact Report (EIR) and will be made available for public review and comment.

- For the lights on the south side of the field, pointing towards the north, can we look into installing light shades/shutters/visors to prevent unnecessary and undesired light shining down on our homes to the northwest?

The District is analyzing mitigation to address potential lighting impacts to the residences adjacent to the campus. Mitigation will be disclosed in the Draft EIR and will be made available for public review and comment.

- What controls are currently in place and or will be in place for the operation of the football field lights? In the past, the lights have been left on very late and, in some cases, all night.

We will consider this issue in parallel with mitigation to address this concern.

We appreciate your engagement with us through this process. Please let us know if you have additional questions or comments.

Thank you,

Dawnalyn Murakawa-Leopard

_____

Dawnalyn Murakawa-Leopard, EdD

Deputy Superintendent

Manhattan Beach Unified School District

325 South Peck Avenue

Manhattan Beach, CA 90266

dmurakawa@mbusd.org

310.318.7345 x5943

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MANHATTAN BEACH UNIFIED SCHOOL DISTRICT E-MAIL DISCLAIMER. THIS COMMUNICATION AND ANY DOCUMENTS, FILES, OR PREVIOUS E-MAIL MESSAGES ATTACHED TO IT CONSTITUTE AN ELECTRONIC COMMUNICATION WITHIN THE SCOPE OF THE ELECTRONIC COMMUNICATION PRIVACY ACT, 18 USCA 2510. THIS COMMUNICATION MAY CONTAIN NON-PUBLIC, CONFIDENTIAL, OR LEGALLY PRIVILEGED INFORMATION INTENDED FOR THE SOLE USE OF THE DESIGNATED RECIPIENT(S). THE UNLAWFUL INTERCEPTION, USE OR DISCLOSURE OF SUCH INFORMATION IS STRICTLY PROHIBITED UNDER 18 USCA 2511 AND ANY APPLICABLE LAWS.

From: "Schumacher, Scott" <Scott.Schumacher@nmrk.com>
Date: Thursday, October 9, 2025 at 3:07 PM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Cc: Kiara Torres <KTorres@mbusd.org>, Hibah Samad <HSamad@mbusd.org>
Subject: RE: [External] Update: Lighting and Measure RLS Projects at Mira Costa High School

Hi Dawnalyn, can you confirm you have received my email below from two weeks ago? Thank you.

From: Schumacher, Scott
Sent: Thursday, September 25, 2025 5:36 PM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Cc: Kiara Torres <KTorres@mbusd.org>
Subject: Re: [External] Update: Lighting and Measure RLS Projects at Mira Costa High School

Dawnalyn, thank you for this information. I own the home at 1360 Voorhees Ave. located directly northwest of Waller football stadium. Pursuant to your correspondence, I have read the initial study and I would like to submit the following comments/questions:

- Can you confirm that only four of the existing eight lighting poles will be receiving new lighting?
- Has there been a study or documentation of the existing lighting illumination levels compared to what is being proposed?
- For the lights on the south side of the field, pointing towards the north, can we look into installing light shades/shutters/visors to prevent unnecessary and undesired light shining down on our homes to the northwest?
- What controls are currently in place and or will be in place for the operation of the football field lights? In the past, the lights have been left on very late and, in some cases, all night.

Thank you very much for your attention.

Sincerely,

Scott Schumacher

Senior Managing Director

Investment Sales - Capital Markets

NEWMARK

t 310.491.2018

m 310.227.3875

scott.schumacher@nmrk.com

Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Katherine M. Butler, MPH, Director
8800 Cal Center Drive
Sacramento, California 95826-3200
dtsc.ca.gov

Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

September 26, 2025

Dawnalyn Murakawa-Leopard
Deputy Superintendent
Manhattan Beach Unified School District
325 South Peck Avenue
Manhattan Beach, CA 90266
dmurakawa@mbusd.org

RE: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE MIRA COSTA HIGH SCHOOL FIELD RENOVATION, LIGHTING IMPROVEMENT, AND FACILITIES MASTER PLAN DATED SEPTEMBER 19, 2025, STATE CLEARINGHOUSE NUMBER 2025090918

Dear Dawnalyn Murakawa-Leopard,

The Department of Toxic Substances Control (DTSC) reviewed the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Mira Costa High School Field Renovation, Lighting Improvement, And Facilities Master Plan (Project). The proposed Project would replace existing field lights at the Waller Football Stadium in the northeast quadrant of the campus; install new field lights at the West Field in the northwest quadrant of the campus; and install new field lights on the softball/baseball fields in the southwest quadrant of the campus. The Project would also include the installation of two new e bike parking area, and improvements identified in the District's Mira Costa High School Facilities Master Plan, which includes demolition, new construction, modernization, and renovation of buildings and facilities on campus. DTSC recommends and requests consideration of the following comments:

1. If the district plans to use California Department of Education (CDE) State funds for the Project, then the district shall comply with the requirements of Education Code (EDC), §17210, §17213.1, and §17213.2, unless otherwise specifically exempted under section §17268. If the district is not using CDE State funds for the Project, or is otherwise specifically exempt under section §17268, DTSC recommends the district continue to investigate, clean up the Site under the oversight of Los Angeles County and in concurrence with all applicable DTSC guidance documents, if necessary. For more information on the CDE State funding, please visit the Office of Public-School Construction webpage. A local education agency may also voluntarily request the CDE site/plan approval for locally funded site acquisitions and new construction projects. In these cases, CDE will require DTSC to review and approve prior to its final approval, except when exempt under section 17268.
2. All imported soil/fill material should be tested to assess any contaminants of concern meet screening levels as outlined in DTSC's Preliminary Endangerment Assessment Guidance Manual. Additionally, DTSC advises referencing the DTSC Information Advisory Clean Imported Fill Material Fact Sheet if importing fill is necessary. To minimize the possibility of introducing contaminated soil/fill material, there should be documentation of the origins of the soil/fill material and, if applicable, sampling be conducted to ensure that the imported soil/fill material are suitable for the intended land use. The soil sampling should include analysis based on the source of the soil/fill and knowledge of prior land use.

DTSC reserves the right to comment on any future circulated documents related to this Project based on our review or proposed or incorporated changes, measures, or project features. DTSC appreciates the opportunity to comment on the NOP of a DEIR for the Mira Costa High School Field Renovation, Lighting Improvement, And Facilities Master Plan. If you would like to proceed with DTSC's school environmental review process, please visit DTSC's Evaluating & Clean-up School 3-Step Process to begin a Phase I Environmental Site Assessment. If you have any questions or would like clarification on

DTSC's comments, please respond to this letter or via our CEQA Review email for additional guidance.

Sincerely,

Tamara Purvis

Tamara Purvis
Associate Environmental Planner
HWMP - Permitting Division – CEQA Unit
Department of Toxic Substances Control
Tamara.Purvis@dtsc.ca.gov

cc: (via email)

Governor's Office of Land Use and Climate Innovation
State Clearinghouse
State.Clearinghouse@lci.ca.gov

Jennifer Kelley
Project Manager
PlaceWorks / Consulting Firm
jkelley@placeworks.com

Dave Kereazis
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HWMP-Permitting Division – CEQA Unit
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Dave.Kereazis@dtsc.ca.gov

Scott Wiley
Associate Governmental Program Analyst
HWMP - Permitting Division – CEQA Unit
Department of Toxic Substances Control
Scott.Wiley@dtsc.ca.gov

From: Jacqueline Sanders <jacquelinesand@gmail.com>
Date: Saturday, October 4, 2025 at 11:09 AM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Cc: Wysh Weinstein <WWeinstein@mbusd.org>, Tina Shivpuri <TShivpuri@mbusd.org>, Jen Dohner <JDohner@mbusd.org>, Jennifer Fenton <JFenton@mbusd.org>, Cathey Graves <CGraves@mbusd.org>, MBUSD Superintendent <Superintendent@mbusd.org>
Subject: Comments for MBUSD CEQA Coordinator

[WARNING]: This email originated from outside of MBUSD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Subject: Scope comments for Mira Costa High School Field Renovation, Lighting Improvements — NOP / CEQA
To: Ms. Dawn Murakawa

CC: Mr. John Bowes & Board Members

Dear MBUSD CEQA Coordinator and Board of Trustees,

I am submitting these comments on behalf of myself and my neighbors in East Manhattan Beach, specifically those of us next door to Mira Costa High School. These lights affect our entire neighbor, not just the houses across the street from the school. MBUSD should be notifying all residents in this area.

We strongly request that the Draft Environmental Impact Report fully analyze the following issues for the proposed Mira Costa field lighting project:

1. **Light trespass and glare — analyze light spill into adjacent residential properties under realistic nighttime operations, using photometric modeling for the proposed 70-foot poles and proposed fixtures; compare to alternatives (lower poles, different fixture types, full cutoff shields).**
2. **Hours of operation and mitigations — evaluate the current lights we do have and look at renting lights for special events instead of permanent lighting. The stadium currently has lights. Lights on practice fields are not needed. Look at the timing of when lights will be on. Up to 11:00 p.m. daily is not conducive to a neighborhood. This is a residential area. What does the city think of this proposal and what are the ordinances for noise and traffic?**

3. **Traffic, parking, and public safety — perform an evening and peak-hour traffic and parking study that assesses displacement parking into residential streets and crosswalk safety for kids. Parking is extremely limited. Certain streets do not have permit parking. Currently residents are unable to park on their own streets. The crosswalks are dangerous. Too many cars driving too fast on Meadows. Many accidents on the corner of Keat and Meadows and drivers currently do not adhere to the Stop signs.**
4. **Cumulative impacts — include cumulative analysis with other local projects and the district's Facilities Master Plan.**
5. **Reasonable alternatives — analyze a no-project alternative, alternate sites with current lighting, reduced height/number of poles, and technology/operational alternatives (lower lumen output, directional shields, timers, restricted rentals). Analyze how parking and traffic issues can be controlled.**
6. **Mitigation monitoring and enforceability — identify enforceable mitigation measures (e.g., curfew hours, rental restrictions, approved staffing for events, parking controls). This should be for current events.**

Please include my comments in the administrative record and provide notice of the Draft EIR and any public hearings.

Please confirm you have received this email.

Sincerely,
Jacqueline and Michael Sanders
1281 Keats Street MB

310-913-1356

jacquelinesand@gmail.com & mikew.sanders@gmail.com

From: Jacqueline Sanders <jacquelinesand@gmail.com>
Date: Wednesday, October 8, 2025 at 6:24 AM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>, Wysh Weinstein <WWeinstein@mbusd.org>, Cathey Graves <CGraves@mbusd.org>, Tina Shivpuri <TShivpuri@mbusd.org>, Jen Dohner <JDohner@mbusd.org>, MBUSD Superintendent <Superintendent@mbusd.org>
Cc: Michael Sanders <mikew.sanders@gmail.com>, Jennifer Fenton <JFenton@mbusd.org>
Subject: Comments on light pollution and it's detrimental affects

[WARNING]: This email originated from outside of MBUSD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Subject: **Scope comments for Mira Costa High School Field Renovation, Lighting Improvements — NOP / CEQA**
To: Ms. Dawn Murakawa

CC: Mr. John Bowes & Board Members

Please include these comments in the Environmental Study Report. I am attaching them. Please confirm you received them.

Thank you,

Jacqueline Sanders

Comments for the Environmental Study on lights and how they affect children and adults negatively and our ecosystem.

I am writing to express my serious concerns regarding the installation of eight (8) 70-foot-tall stadium lights within 500 feet of my home. While I understand the desire to enhance athletic facilities, this project would have significant negative impacts on the health and well-being of my family, as well as on the surrounding ecological environment.

1. Impacts on Human Health and Well-Being
Exposure to artificial light at night—particularly high-intensity LED stadium lighting—has been scientifically linked to disruptions in circadian rhythms, sleep disorders, increased stress, and other health concerns. Bright nighttime lighting can penetrate bedroom windows even with shades drawn, leading to difficulty falling asleep, fragmented rest, and potential long-term health consequences. For children and adolescents, maintaining a natural sleep schedule is critical to healthy development and academic performance.

2. Noise and Traffic Implications
Extended nighttime use of the fields under bright lighting brings increased noise, traffic congestion, and late-night activity, all of which can disrupt the peace and quiet of residential neighborhoods. This affects not only our quality of life but also our sense of safety and community.

3. Ecological and Environmental Impacts
Artificial light at night is a well-documented ecological stressor. Local wildlife—including birds, bats, pollinators, and insects—depend on natural light cycles for navigation, feeding, and reproduction. Stadium lights can disorient nocturnal animals, disrupt bird migration patterns, and attract insects in unnatural concentrations, leading to cascading effects on local ecosystems.

4. Light Pollution and Neighborhood Character
The installation of eight 70-foot lights will dramatically alter the character of our neighborhood. The glow from these lights will extend far beyond the field itself, creating skyglow and intrusive light that affects not only immediate neighbors but the broader community.

Jacqueline & Michael Sanders

1281 Keats Street, MB

From: Sally Andrade <sandrade90266@gmail.com>
Date: Sunday, October 12, 2025 at 10:49 AM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Subject: Mira Costa Lighting Project

[WARNING]: This email originated from outside of MBUSD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello,

I live on S. Meadows, directly across from the north end of the Mira Costa West field. I attended the scoping meeting on Oct 6th, and I share the concerns that many of my neighbors voiced.

Traffic, parking, and noise

The traffic in this small area of the neighborhood has gotten progressively worse every year. The drop offs and pick ups at the Meadows/Keats T intersection is horrific. As both a driver and a pedestrian, I'm frequently (daily) fearful of car/pedestrian accidents. Parents are letting kids out all over the place.

The parking situation is out of control already. As it is now, when there's an evening sporting event, we've often got to park several blocks away and retrieve our cars later. Cars block our driveway at times.

We are all concerned about these problems now extending into the later into the evening. I'm at the track on Tuesday evenings until about 8pm, and when I'm walking home the scene at Keats/Meadows is nuts with pick ups from various sports. Cars frequently stop and wait in the crosswalk area, so that it's hard to even cross the street safely. There is shouting and laughing and talking. I hope your traffic study captured that kind of time period. Will this now be happening at 10 or 11 at night?

Is all the parking intended to be on neighborhood streets? If the visitors use the school parking lot, will they be able to walk through the school to the field? If not, well, you're setting us up for major impact.

I imagine that some of the field rentals will include busing. Will buses be parked on our streets?

Hours

How late will the lights be on? What will ensure that the posted hours are adhered to? Will the lights automatically turn off even if a game is not completed, for example?

Light pollution

The lights would be shining into some neighbors' homes and yards. What mitigation will you take?

Restrooms

Where will the visitors use a restroom?

Trash

We already pick up trash from our yards and the sidewalks. What will you do to minimize the additional impact of extended use of the fields?

I hope that the district will truly listen to the community and work with us to ensure our quality of life is not significantly impacted.

Thank you,

Sally Andrade

California Department of Transportation

DISTRICT 7
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 407-6607
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

October 15, 2025

Dawnalyn Murakawa-Leopard
Manhattan Beach Unified School District
325 South Peck Avenue
Manhattan Beach, California 90266

RE: Mira Costa High School Field Renovation, Lighting Improvement, and Facilities Master Plan - NOP
SCH# 2025090918
GTS# 07-LA-2025-04912

Dear Jordan Miles,

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-referenced project. The Manhattan Beach Unified School District is proposing replacing existing field lights at the Waller Football Stadium in the northeast quadrant of the campus; install new field lights at the West Field in the northwest quadrant of the campus; and install new field lights on the softball/baseball fields in the southwest quadrant of the campus. The project would also include the installation of two new e bike parking area, and improvements identified in the District's Mira Costa High School Facilities Master Plan, which includes demolition, new construction, modernization, and renovation of buildings and facilities on campus.

The nearest State facility is SR-1 and U.S. Highway I-405. After reviewing the Notice of Preparation (NOP), Caltrans has the following comments:

Caltrans encourages the Lead Agency to incorporate multi-modal infrastructure along and within school boundaries to meet community placemaking and safe urban design objectives. This infrastructure, encompassing ADA-compliant design, adequate

sidewalks, high-visibility crosswalks, Class IV bike lanes, and bike parking, is crucial for establishing a fully accessible Complete Street that supports pedestrians, bicyclists, and transit riders. This includes reducing the amount of parking whenever possible, as research looking at the relationship between land-use, parking, and transportation indicates that the amount of car parking supplied can undermine a project's ability to encourage public transit and active modes of transportation. For any project to better promote public transit and reduce vehicle miles traveled, we recommend the implementation of Transportation Demand Management (TDM) strategies as an alternative to building car parking.

Caltrans recommends limiting large truck travel and construction traffic to off-peak commute hours. A permit for any heavy construction equipment and or materials that require the use of oversized transport vehicles on State highways. If construction traffic is expected to cause issues on any State facilities, please submit a construction traffic control plan detailing potential impacts for Caltrans review.

Should you have any questions, please feel free to contact Nestor Lemus, the project coordinator, at Nestor.Lemus@dot.ca.gov and refer to GTS # 07-LA-2025-04912.

Sincerely,

Miya Edmonson

MIYA EDMONSON
LDR/CEQA Branch Chief

cc: State Clearinghouse

From: N Sieber-LoSasso <nslosasso@gmail.com>
Date: Friday, October 17, 2025 at 1:09 PM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Cc: N Sieber-LoSasso <nslosasso@gmail.com>
Subject: Mira Costa High School Field Renovation Project

Dr. Murwakwa-Leopard.

I hope this message finds you well. My name is Nicole (Sieber) LoSasso, and my family owns the home at 1260 Bryant Place. I grew up on Bryant Place and have cherished every moment spent growing up in this special neighborhood. I am a proud Pennekamp Dragon, a proud Foster A. Begg Intermediate alum and of course a Mira Costa Mustang forever. I have some of the best neighbors, some for more than 40 years and some new ones who have come to us from the ravages of last year's fires.

Over the years, those of us who border the high school have seen changes—particularly an increase in club and high school sports activity at the nearby school fields. While these activities promote health and community engagement, they also bring challenges: increased traffic, noise, parking congestion, and debris.

Last year, a lacrosse ball from one of the weekend clubs cracked our car windshield—a surprising and costly incident. When we contacted the School District, we were told the damage was likely caused by a third-party rental group, that it would be nearly impossible to locate the person or group and therefore not the responsibility of the school district. Aside from feeling abandoned by the very school district I attended on this issue, this experience highlights the kind of unintended consequences that can arise from increased field usage.

As I understand the proposal, the intent is the installation of 70-foot lights around the field perimeters, with plans to keep the lights on until 10 PM seven days a week to support rental activities. This proposal raises serious concerns about light pollution, traffic, noise, and the overall impact on our neighborhood's quality of life.

I also have real concerns about how the notification of this project was only sent to residents within 500 feet of the school property. Many neighbors, including those just a few blocks away—were unaware of the proposal or the public comment meeting that took place on October 6. Even City Council members, when asked about their view on the project, expressed surprise at the lack of communication and clarity around the plan.

I am also uncomfortable with the fact that the district only called one public meeting for the community to attend and the haste this period of review is being done in. I would like to encourage you to consider expanding the duration of public comment and to hold a 2nd meeting where further engagement with the community can be had. Doing so would be an opportunity to ensure that any changes made to our neighborhood are made with transparency, fairness, and consideration for all residents and the school needs.

Surely, there is a way to support youth sports and school revenue without compromising the integrity and livability of our community. Let's work together to advocate for a balanced solution that works for everyone.

Thank you for your time.

Nicole (Sieber) LoSasso

512-751-2217

From: "Ludovissy, Jennifer@Wildlife" <Jennifer.Ludovissy@Wildlife.ca.gov>
Date: Friday, October 17, 2025 at 8:55 AM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Cc: "Tang, Victoria@Wildlife" <Victoria.Tang@wildlife.ca.gov>, "Gibson, Steve@Wildlife" <Steve.Gibson@wildlife.ca.gov>, "Scott, Riley@Wildlife" <Riley.Scott@Wildlife.ca.gov>, "Hailey, Cindy@Wildlife" <Cindy.Hailey@wildlife.ca.gov>, "state.clearinghouse@lci.ca.gov" <state.clearinghouse@lci.ca.gov>
Subject: Copy of letter re: Mira Costa High School Field Renovation, Lighting Improvement, and Facilities Master Plan Project

Hello Dawnalyn,

Please see attached copy for your records. If you have any questions, please contact Riley Scott.

Thank you,

Jenny

JENNY LUDOVISSY | she/her
Staff Services Analyst

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
South Coast Region | (858) 716-7147

Monday - Friday | 7:30am-4:00pm

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

October 17, 2025

Dawnalyn Murakawa-Leopard
Deputy Superintendent
Manhattan Beach Unified School District
325 South Peck Avenue
Manhattan Beach, CA 90266
(310) 318-7345
dmurakawa@mbusd.org

Subject: Notice of Preparation of a Draft Environmental Impact Report for the Mira Costa High School Field Renovation, Lighting Improvement, and Facilities Master Plan Project, SCH No. 2025090918, Los Angeles County, CA

Dear Dawnalyn Murakawa-Leopard:

The California Department of Fish and Wildlife (CDFW) reviewed the Notice of Preparation (NOP) from the Manhattan Beach Unified School District (MBUSD) for the Mira Costa High School Field Renovation, Lighting Improvement, and Facilities Master PLan Project (Project) pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines[1].

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Fish & G. Code, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW may also act as a Responsible Agency under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law[2] of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.) or the Native Plant Protection Act (NPPA; Fish & G. Code, §1900 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT DESCRIPTION SUMMARY

Objective: The objective of the Project is to replace existing field lights at the Waller Football Stadium, install new field lights at the West Field and softball/baseball fields, installation of two new electric bike parking areas, and various improvements to school facilities as outlined in MBUSD's Mira Costa High School Facilities Master Plan (FMP). The activities include the demolition and reconstruction of a one-story library and renovations to 2 one-story classroom buildings and a one-story multi-purpose Food and Service building.

Location: The Project site is located at 1401 Artesia Boulevard (Assessor's Parcel Number 4168-002-906) in the City of Manhattan Beach, Los Angeles County. The Project site is bounded by Artesia Boulevard to the south, S. Peck Avenue to the east, S. Meadows Avenue to the west, and developed land to the north.

Timeframe: The proposed lighting improvements are expected to be installed over a three-month period and the activities covered by the FMP will occur over the next five years.

Biological Setting: The Project site is a high school campus that is generally surrounded on all sides by developed residential and commercial lots. Aerial imagery depicts an undeveloped, and potentially undisturbed lot to the south across Artesia Boulevard. Biological resource assessments have not been performed for the Project site.

Species that have the potential to occur and may be impacted by the Project include, but are not limited to: Crotch's bumble bee (*Bombus crotchii*; California Endagered Species Act (CESA) Candidate), beach spectaclepod (*Dithyrea maritima*; California Rare Plant Rank (CRPR) 1B.1), monarch (*Danaus plexipus* ssp. *plexipus*; Endangered

[2] "Take" is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

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Species Act (ESA) Proposed Threatened), and Southern California legless lizard (*Annella stebbinsi*; SSC).

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the City in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

Specific Comments

1) **Crotch's Bumble Bee.** Crotch's bumble bee is a generalist bee species that can utilize a variety of habitats included in the Project area, such as open grasslands, shrublands, and semi-urban settings for nesting and foraging opportunities. According to CNDDB, Crotch's bumble bee has been observed within two miles of the Project site. Focused surveys should be conducted to determine Crotch's bumble presence or absence within the Project site. Without a focused survey, Project activities could result in permanent loss of floral resources and nesting sites, nest abandonment, and/or direct injury or mortality of Crotch's bumble bee.

   In preparation of the DEIR, CDFW recommends the Project proponent retain a qualified biologist with the appropriate handling permits to conduct focused surveys. Focused surveys should follow CDFW's Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species (CDFW 2023). Focused surveys should also be conducted throughout the suitable habitat within the Project area during the appropriate flying season to ensure no missed detection of Crotch's bumble bee occurs. Findings from the focused survey should be included in the DEIR for complete public disclosure and review.

   The DEIR should also provide a discussion of habitat suitability for Crotch's bumble bee. Additionally, the DEIR should provide a discussion of the Project's potential direct and indirect impacts on Crotch's bumble bee. If the Project would impact Crotch's bumble bee, the DEIR should provide measures to minimize, and/or mitigate potential impacts to Crotch's bumble bee as well as habitat supporting the species. Coordination with CDFW is recommended and may include obtaining appropriate take authorization under CESA.

2) **Species of Special Concern.** A review of CNDDB indicates observations of southern California legless lizard within a two-mile radius of the Project site. Project activities may result in death or injury of adults, juveniles, eggs, or hatchlings. Moreover, the Project may eliminate foraging, breeding, or nesting habitat and refugia for these species. In preparation of the DEIR, CDFW recommends that the City thoroughly discuss potential impacts and include mitigation measures that provide compensatory mitigation for Project impacts on SSC.

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3) **Rare Plants**. According to CNDDB, beach spectaclepod have been observed within a two-mile radius of the Project site. Potential Project activities, such as grading, construction, and landscaping may have impacts to these plant species. Impacts to special status plant species should be analyzed in the DEIR as they meet the definition of endangered, rare, or threatened species (CEQA Guidelines, § 15380). CDFW recommends the City provide full disclosure of the Project's impact on rare plants and their associated seedbank. CDFW also recommends the City incorporate mitigation measures in the DEIR that avoid, minimize, and mitigate potential impacts on rare plants and supporting habitat. The City should also retain a qualified biologist with the appropriate handling permits to conduct a rare plant survey throughout the Project site to confirm presence/absence of rare plants. Surveys should adhere to CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2021). Findings of the rare plant survey should be disclosed in the DEIR.

4) **Monarchs.** A review of CNDDB shows multiple observations of monarchs within two miles of the Project site. Additionally, the Project site is within two miles of monarch overwintering habitat, which suggests the Project site may also have potential monarch overwintering habitat (CDFW 2025). As the Project area may provide suitable habitat for monarchs, Project activities may directly impact monarch butterfly overwintering habitat. Moreover, noise from construction activities may disturb overwintering roosts. The DEIR should evaluate the Project's potential direct, indirect, and cumulative impacts on monarchs and overwintering habitat during the construction and operational phase of the Project. CDFW recommends that MBUSD incorporate a measure to perform focused surveys for monarch on the Project site and within a reasonable buffer.

5) **Night Lighting:** According to the DEIR, the Project proposes the replacement of existing lighting poles and installation of new lighting poles for athletic fields. Artificial night lighting can affect plants and wildlife through attraction and disorientation, loss of connectivity, interference with pollination and foraging, and disruption of circadian rhythms and lunar and seasonal cycles (Barrientos et al. 2023). CDFW recommends the DEIR evaluate lighting impacts, especially nighttime lighting, on wildlife species and biological resources within the Project area during the construction and operational phases. CDFW also recommends the County prepare a lighting plan that discusses the criteria used in selecting the types of light fixtures, a schedule detailing the hours various lights will be on, and steps taken by MBUSD to minimize adverse effects on wildlife species. Methods for minimizing adverse effects of artificial night lighting include lighting only where light is necessary, turning lights off when they are not in use (e.g., motion detector), only using as much light as is needed, directing the light only where it is needed, and using the lowest possible correlated color temperature for the goal of the lighting.

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General Comments

1) Disclosure. The DEIR should provide an adequate, complete, and detailed disclosure about the effects which a proposed project is likely to have on the environment (Pub. Resources Code, § 20161; CEQA Guidelines, § 15151). Such disclosure is necessary so CDFW may provide comments on the adequacy of proposed avoidance, minimization, or mitigation measures, as well as assess the significance of the specific impact relative to plant and wildlife species impacted (e.g., current range, distribution, population trends, and connectivity).

2) Project Description and Alternatives. To enable adequate review and comment on the proposed Project from the standpoint of the protection of fish, wildlife, and plants, CDFW recommends the following information be included in the DEIR.

   a. A complete discussion of the purpose and need for, and description of the proposed Project.

   b. A range of feasible alternatives to the Project location to avoid or otherwise minimize direct and indirect impacts on sensitive biological resources and wildlife movement areas. CDFW recommends the City select Project designs and alternatives that would avoid or otherwise minimize direct and indirect impacts on biological resources. CDFW also recommends the City consider establishing appropriate setbacks from sensitive and special status biological resources. Setbacks should not be impacted by ground disturbance or hydrological changes from any future Project-related construction, activities, maintenance, and development. As a general rule, CDFW recommends reducing or clustering a development footprint to retain unobstructed spaces for vegetation and wildlife and provide connections for wildlife between properties and minimize obstacles to open space.

   c. Project alternatives should be thoroughly evaluated, even if an alternative would impede, to some degree, the attainment of the Project objectives or would be more costly (CEQA Guidelines, § 15126.6). The DEIR shall include sufficient information about each alternative to allow meaningful evaluation, public participation, analysis, and comparison with the proposed Project (CEQA Guidelines, § 15126.6).

   d. Where the Project may impact aquatic and riparian resources, CDFW recommends the City select Project designs and alternatives that would fully avoid impacts to such resources. CDFW also recommends an alternative that would not impede, alter, or otherwise modify existing surface flow, watercourse and meander, and water-dependent ecosystems and natural communities. Project designs should consider elevated crossings to avoid channelizing or narrowing of watercourses. Any modifications to a river, creek, or stream may cause or magnify upstream bank erosion, channel incision, and drop in water level, which may cause the watercourse to alter its course of flow.

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3) Biological Baseline Assessment. An adequate biological resources assessment should provide a complete assessment and impact analysis of the flora and fauna within and adjacent to the Project site and where the Project may result in ground disturbance. The assessment and analysis should place emphasis on identifying endangered, threatened, rare, and sensitive species; regionally and locally unique species; and sensitive habitats. An impact analysis will aid in determining the Project's potential direct, indirect, and cumulative biological impacts, as well as specific mitigation or avoidance measures necessary to offset those impacts. CDFW also considers impacts to Species of Special Concern (SSC) a significant direct and cumulative adverse effect without implementing appropriate avoidance and/or mitigation measures. The DEIR should include the following information.

a. Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region (CEQA Guidelines, § 15125(c)). The DEIR should include measures to fully avoid and otherwise protect Sensitive Natural Communities. CDFW considers Sensitive Natural Communities as threatened habitats having both regional and local significance. Natural communities, alliances, and associations with a State-wide rarity ranking of S1, S2, and S3 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by visiting the Vegetation Classification and Mapping Program - Natural Communities webpage[3].

b. A thorough, recent, floristic-based assessment of special status plants and natural communities following CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*[4]. Botanical field surveys should be comprehensive over the entire Project site, including areas that will be directly or indirectly impacted by the Project. Adjoining properties should also be surveyed where direct or indirect Project effects could occur, such as those from fuel modification, herbicide application, invasive species, and altered hydrology. Botanical field surveys should be conducted in the field at the times of year when plants will be both evident and identifiable. Usually, this is during flowering or fruiting. Botanical field survey visits should be spaced throughout the growing season to accurately determine what plants exist in the Project site. This usually involves multiple visits to the Project site (e.g., in early, mid, and late season) to capture the floristic diversity at a level necessary to determine if special status plants are present.

c. Floristic alliance- and/or association-based mapping and vegetation impact assessments conducted in the Project site and within adjacent areas. The Manual of California Vegetation[5], second edition, (Sawyer, Keeler-Wolf, & Evens,

[3] https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities
[4] https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline
[5] https://vegetation.cnps.org/

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2009) should also be used to inform this mapping and assessment. Adjoining habitat areas should be included in this assessment where the Project's construction and activities could lead to direct or indirect impacts offsite.

d. A complete and recent assessment of the biological resources associated with each habitat type in the Project site and within adjacent areas. A full literature review includes but is not limited to CDFW's California Natural Diversity Database[6] (CNDDB). The CNDDB should be accessed to obtain current information on any previously reported sensitive species and habitat. An assessment should include a minimum nine-quadrangle search of the CNDDB to determine a list of species potentially present in the Project site. A nine-quadrangle search should be provided in the Project's CEQA document for adequate disclosure of the Project's potential impact on biological resources.

e. A complete, recent, assessment of endangered, rare, or threatened species and other sensitive species within the Project site and adjacent areas, including SSC and California Fully Protected Species (Fish & G. Code, §§ 3511, 4700, 5050, and 5515). Species to be addressed should include all those which meet the CEQA definition of endangered, rare, or threatened species (CEQA Guidelines, § 15380). Seasonal variations in use of the Project site should also be addressed such as wintering, roosting, nesting, and foraging habitat. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, may be required if suitable habitat is present. See CDFW's Survey and Monitoring Protocols and Guidelines[7] for established survey protocol. Acceptable species-specific survey procedures may be developed in consultation with CDFW and U.S. Fish and Wildlife Service.

f. A recent wildlife and rare plant survey. A lack of records in the CNDDB does not mean that rare, threatened, or endangered plants and wildlife do not occur. Field verification for the presence or absence of sensitive species is necessary to provide a complete biological assessment for adequate CEQA review (CEQA Guidelines, § 15003(i)). CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive taxa, particularly if Project implementation build out could occur over a protracted time frame or in phases.

4) Direct and Indirect Impacts on Biological Resources. The DEIR should provide a thorough discussion of direct and indirect impacts expected to affect biological

[6] https://wildlife.ca.gov/Data/CNDDB
[7] https://wildlife.ca.gov/conservation/survey-protocols

Docusign Envelope ID: 8FC94DBE-E0D0-4FD6-A438-F815FBF5D110

resources with specific measures to offset such impacts. The DEIR should address the following.

a. A discussion of potential impacts from lighting, noise, temporary and permanent human activity, and exotic species, and identification of any mitigation measures. A discussion regarding Project-related indirect impacts on biological resources. These include resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands (e.g., preserve lands associated with a Natural Community Conservation Plan (Fish & G. Code, § 2800 et. seq.)).

b. A discussion of both the short-term and long-term effects of the Project on species population distribution and concentration, as well as alterations of the ecosystem supporting those species impacted (CEQA Guidelines, § 15126.2(a)).

c. Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in areas adjacent to the Project, should be fully analyzed and discussed in the DEIR.

d. A discussion of post-Project fate of drainage patterns, surface flows, and soil erosion and/or sedimentation in streams and water bodies. The discussion should also address the potential water extraction activities and the potential resulting impacts on habitat supported by the groundwater. Measures to mitigate such impacts should be included.

e. An analysis of impacts from proposed changes to land use designations and zoning, and existing land use designation and zoning located nearby or adjacent to natural areas that may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the DEIR.

5) Cumulative Impact. Cumulative impacts on biological resources can result from collectively significant projects which are individually insignificant. The Project, when considered collectively with prior, concurrent, and probable future projects, may have a significant cumulative effect on biological resources. The Project may have the potential to substantially reduce the number or restrict the range of endangered, rare, or threatened species. Species that may be impacted by the Project include, but are not limited to, the biological resources described in this letter.

Accordingly, CDFW recommends the DEIR evaluate the Project's potential cumulative impacts on biological resources. The Project may have a "significant effect on the environment" if the possible effects of the Project are individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in

Docusign Envelope ID: 8FC94DBE-E0D0-4FD6-A438-F815FBF5D110

connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (Pub. Resources Code, § 21083(b)). The City's conclusions regarding the significance of the Project's cumulative impact should be justified and supported by evidence to make those conclusions. Specifically, if the City concludes that the Project would not result in cumulative impacts on biological resources, the City, "shall identify facts and analysis supporting the Lead Agency's conclusion that the cumulative impact is less than significant" (CEQA Guidelines section § 15130(a)(2)).

6) Nesting Birds. To avoid impacts to nesting birds, CDFW recommends that clearing of vegetation occur outside of the peak avian breeding season, which general runs from February 1 through September 1 (as early as January 1 for some raptors). If Project construction is necessary during the bird breeding season, a qualified biologist with experience in conducting breeding bird surveys should conduct a nesting bird survey within three days prior to work in the area. If an active nest is identified, a buffer shall be established between the construction activities and the nest so that nesting activities are not interrupted. For the given Project site, CDFW generally recommends a 100-foot buffer from common avian species, 300 feet for listed or highly sensitive, and 500 feet for raptors. The buffer should be delineated by temporary fencing and remain in effect as long as construction is occurring. No Project construction shall occur within the fenced nest zone until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be impacted by the Project. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.

7) Mitigation Measures. Public agencies have a duty under CEQA to prevent significant, avoidable damage to the environment by requiring changes in a project through the use of feasible alternatives or mitigation measures (CEQA Guidelines, §§ 15002(a)(3), 15021). Pursuant to CEQA Guidelines section 15126.4, an environmental document shall describe feasible measures which could mitigate impacts below a significant level under CEQA. Mitigation measures must be feasible, effective, implementable, and fully enforceable/imposed by the lead agency through permit conditions, agreements, or other legally binding instruments (Pub. Resources Code, § 21081.6(b); CEQA Guidelines, § 15126.4).

   a. The DEIR should provide mitigation measures that are specific and detailed (i.e., responsible party, timing, specific actions, location) in order for a mitigation measure to be fully enforceable and implemented successfully via a mitigation monitoring and/or reporting program (Pub. Resources Code, § 21081.6; CEQA Guidelines, § 15097).

   b. If a proposed mitigation measure would cause one or more significant effects, in addition to impacts caused by the proposed Project, the DEIR should include a discussion of the effects of proposed mitigation measures (CEQA Guidelines,

Docusign Envelope ID: 8FC94DBE-E0D0-4FD6-A438-F815FBF5D110

§ 15126.4(a)(1)). In that regard, the DEIR should provide an adequate, complete, and detailed disclosure about the Project's proposed mitigation measure(s). Adequate disclosure is necessary so CDFW may assess the potential impacts of proposed mitigation measures.

8) Compensatory Mitigation. The DEIR should include compensatory mitigation measures for the Project's significant impacts (direct and/or through habitat modification) to sensitive and special status plants, animals, and habitats. Mitigation measures should emphasize avoidance and minimization of Project-related impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore inadequate to mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed. Areas proposed as mitigation lands should be protected in perpetuity with a conservation easement and financial assurance and dedicated to a qualified entity for long-term management and monitoring.

9) Long-term Management of Mitigation Lands. For proposed mitigation lands, the DEIR should include measures to protect the targeted habitat values in perpetuity. The mitigation should offset Project-induced qualitative and quantitative losses of biological resources. Issues that should be addressed include (but are not limited to) restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, and increased human intrusion. An appropriate endowment should be set aside to provide for long-term management of mitigation lands.

10) Translocation/Salvage of Plants and Animal Species. Translocation and transplantation is the process of removing plants and wildlife from one location and permanently moving it to a new location. CDFW generally does not support the use of translocation or transplantation as the primary mitigation strategy for unavoidable impacts to endangered, rare, or threatened plants and animals. These efforts are experimental, and the outcome is unreliable. CDFW has found that permanent preservation and management of habitat capable of supporting these species is often a more effective long-term strategy for conserving plants and animals and their habitats.

11) Scientific Collecting Permit. A Scientific Collecting Permit would be necessary if there is a plan to capture and relocate wildlife. Pursuant to the California Code of Regulations, title 14, section 650, qualified biologist(s) must obtain appropriate handling permits to capture, temporarily possess, and relocated wildlife to avoid harm or mortality in connection with Project-related activities. CDFW has the authority to issue permits for the take or possession of wildlife, including mammals; birds, nests, and eggs; reptiles, amphibians, fish, plants; and invertebrates (Fish & G. Code, §§ 1002, 1002.5, 1003). A Scientific Collecting Permit is required to

Docusign Envelope ID: 8FC94DBE-E0D0-4FD6-A438-F815FBF5D110

monitor project impacts on wildlife resources, as required by environmental documents, permits, or other legal authorizations; and, to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with otherwise lawful activities (Cal. Code Regs., tit. 14, § 650). For more information, please see CDFW's Scientific Collecting Permit webpage[8].

12) Wetland Resources. CDFW, as described in Fish and Game Code section 703(a), is guided by the Fish and Game Commission's (Commission) policies[9]. Through its Wetlands Resources policy, the Commission "…seek[s] to provide for the protection, preservation, restoration, enhancement, and expansion of wetland habitat in California" (California Fish and Game Commission, 2005). It is the policy of the Commission to strongly discourage development in or conversion of wetlands. It opposes, consistent with its legal authority, any development or conversion that would result in a reduction of wetland acreage or wetland habitat values. To that end, the Commission opposes wetland development proposals unless, at a minimum, project mitigation assures there will be 'no net loss' of either wetland habitat values or acreage. The Commission strongly prefers mitigation which would achieve expansion of wetland acreage and enhancement of wetland habitat values."

    a. The Wetlands Resources policy provides a framework for maintaining wetland resources and establishes mitigation guidance. CDFW encourages avoidance of wetland resources as a primary mitigation measure and discourages the development or type conversion of wetlands to uplands. CDFW encourages activities that would avoid the reduction of wetland acreage, function, or habitat values. Once avoidance and minimization measures have been exhausted, a project should include mitigation measures to assure a "no net loss" of either wetland habitat values, or acreage, for unavoidable impacts to wetland resources. Conversions include, but are not limited to, conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether ephemeral, intermittent, or perennial, should be retained and provided with substantial setbacks, which preserve the riparian and aquatic values and functions benefiting local and transient wildlife populations. CDFW recommends mitigation measures to compensate for unavoidable impacts be included in the DEIR and these measures should compensate for the loss of function and value.

    b. The Fish and Game Commission's Water policy guides CDFW on the quantity and quality of the waters of this State that should be apportioned and maintained respectively so as to produce and sustain maximum numbers of fish and wildlife; to provide maximum protection and enhancement of fish and wildlife and their habitat; encourage and support programs to maintain or restore a high quality of

[8] https://wildlife.ca.gov/Licensing/Scientific-Collecting
[9] https://fgc.ca.gov/About/Policies/Miscellaneous

Docusign Envelope ID: 8FC94DBE-E0D0-4FD6-A438-F815FBF5D110

the waters of this State; prevent the degradation thereof caused by pollution and contamination; and, endeavor to keep as much water as possible open and accessible to the public for the use and enjoyment of fish and wildlife. CDFW recommends avoidance of water practices and structures that use excessive amounts of water, and minimization of impacts that negatively affect water quality, to the extent feasible (Fish & G. Code, § 5650).

13) Use of Native Plants and Trees. CDFW recommends the City require the Project Applicant to provide a native plant palette for the Project. The Project's landscaping plan should be disclosed and evaluated in the DEIR for potential impacts on biological resources such as natural communities adjacent to the Project site (e.g., introducing non-native, invasive species). CDFW supports the use of native plants for the Project especially considering the Project's location adjacent to protected open space and natural areas. CDFW strongly recommends avoiding non-native, invasive species for landscaping and restoration, particularly any species listed as 'Moderate' or 'High' by the California Invasive Plant Council[10] CDFW supports the use of native species found in naturally occurring plant communities within or adjacent to the Project site. In addition, CDFW supports planting species of trees, such as oaks (Quercus genus), and understory vegetation (e.g., ground cover, subshrubs, and shrubs) that create habitat and provide a food source for birds. CDFW recommends retaining any standing, dead, or dying tree (snags) where possible because snags provide perching and nesting habitat for birds and raptors. Finally, CDFW supports planting species of vegetation with high insect and pollinator value.

14) Lake and Streambed Alteration Agreement. CDFW has regulatory authority over activities in streams that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of any river, stream, or lake or use material from a river, stream, or lake. For any such activities, the Project Proponent (or "entity") must provide written notification to CDFW pursuant to section 1600 et seq. of the Fish and Game Code. Based on this notification and other information, CDFW determines whether a Lake and Streambed Alteration Agreement (LSAA) with the applicant is required prior to conducting the proposed activities. CDFW's issuance of a LSAA for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. CDFW recommends that the Project Proponent assess whether notification is appropriate. A Notification package for a LSAA may be obtained by accessing CDFW's Lake and Streambed Alteration Program website[11].

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make

[10] https://www.cal-ipc.org/plants/inventory/
[11] http://www.wildlife.ca.gov/Conservation/LSA

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subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNDDB website[12] provides direction regarding the types of information that should be reported and allows on-line submittal of field survey forms.

In addition, information on special status native plant populations and sensitive natural communities, should be submitted to CDFW's Vegetation Classification and Mapping Program using the Combined Rapid Assessment and Relevé Form[13].

The City should ensure data collected for the preparation of the DEIR is properly submitted.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP to assist the City in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Riley Scott[14], Environmental Scientist.

Sincerely,

DocuSigned by:
5991E19EF8094C3...

Victoria Tang
Environmental Program Manager
South Coast Region

ec: California Department of Fish and Wildlife
Victoria Tang, Environmental Program Manager

[12] https://wildlife.ca.gov/Data/CNDDB
[13] https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Submit
[14] Phone: (858) 861-8020; Email: Riley.Scott@wildlife.ca.gov

Docusign Envelope ID: 8FC94DBE-E0D0-4FD6-A438-F815FBF5D110

Steve Gibson, Senior Environmental Scientist (Supervisory)
Riley Scott, Environmental Scientist
Cindy Hailey, Staff Services Analyst

Office of Planning and Research
State.Clearinghouse@opr.ca.gov

REFERENCES

California Department of Fish and Game. (2011). *CNDDB Data Use Guidelines*. Retrieved from https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=27285&inline

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From: Beth Orozco <beth.boehm@gmail.com>
Date: Monday, October 20, 2025 at 9:02 AM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Cc: MBUSD Superintendent <Superintendent@mbusd.org>
Subject: Public Comment: Opposition to Mira Costa Field Lighting on Meadows Field

[WARNING]: This email originated from outside of MBUSD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Ms. Murakawa-Leopard & Dr. Bowes,

I am writing to provide public comment regarding the proposed installation of lighting at the Mira Costa Meadows Field and the softball/baseball fields. As a long-time resident living adjacent to the fields since 2014, and as a parent of two students currently attending Pennekamp and MBMS, I want to express my strong concerns about this proposal and ask the District to reconsider the plan as currently outlined.

1. Intrusive Lighting & Neighborhood Impact
The proposed lighting will directly and significantly intrude into neighboring homes, including ours. The Meadows and nearby streets are in close proximity to the fields, unlike the softball/baseball areas that are buffered by more distance and less residential density. The glow and glare from field lighting would impact our family's ability to enjoy our home and outdoor space, particularly in the evenings. One potential compromise to consider is only lighting softball/baseball where the adjacent are the church and Artesia Blvd.

2. Traffic, Parking, and Safety
Traffic and parking congestion in the Poet Section—particularly on Meadows, Bryant, Prospect, and Keats—are already severe and unsafe. Visitors frequently block driveways, make illegal and fast U-turns, and double park during drop-off and pick-up, creating dangerous conditions for pedestrians and children.

If the District proceeds with the lighting project, I urge MBUSD to work closely with the neighborhood and City of Manhattan Beach on a comprehensive mitigation plan that addresses:

- **Parking management: Require all field users to park in Mira Costa's existing lots** with clear signage and marked pedestrian pathways to the fields. Get parking off Meadows, Bryant, Keats, Prospect and surrounding areas. Allow foot traffic from

neighbors. Create a safe and required drop off / pick up area from Artesia in the main lot.

- **Residential parking protection:** Extend the existing "permit only" resident parking restrictions to include evenings and weekends, which would align with anticipated field usage times. This works for student parking at Costa, extend the program to include field usage times.
- **Traffic safety:** Improve enforcement and redesign unsafe areas at Meadows and Keats, where vehicles currently double park and obstruct sight lines. This is already dangerous and would get worse. The police dept has to patrol this regularly just with school usage.
- **Curb painting and parking delineation:** Allow parking only where safe and feasible to prevent driveway blockages and improve traffic flow.

3. Hours of Operation & Lighting Limits
Should lighting move forward, I respectfully request that the District establish and enforce reasonable usage limits:

- Field lights off by **8:00 PM** on weekdays and **7:00 PM** on Sundays.
- No late-night practices, tournaments, or events that would extend traffic and noise into the evening hours.
- Careful placement and shielding of light poles to minimize spillover into neighboring yards and homes. Don't put poles on meadows where you have adjacent neighbors.

4. Field Maintenance & Cleanliness
Current maintenance levels are already insufficient. Trash bins overflow, bathrooms are often not available, and the landscaping along Meadows is consistently degraded. The sidewalks are often littered with debris. Before expanding field usage, the District should ensure proper maintenance staffing and collaborate with the City to address wear and tear, particularly given the frequent potholes and heavy vehicle traffic on Meadows.

5. Access for Local Kids
Finally, one unintended consequence of adding lights may be reducing informal access for local children. My kids and many others in the neighborhood enjoy using the fields before dusk for unstructured play. Increased scheduling and field reservations could eliminate that valuable community space.

We are big supporters of MBUSD—our family enjoys the sounds of the band practice, the excitement of football games, and the energy of youth sports. We want to see students

thrive. But the current conditions around the fields are already stretched beyond capacity, and adding lighting without a robust mitigation plan will make the situation untenable for nearby residents.

Please engage the neighborhood in developing a solution that balances school and community needs while maintaining safety, respect, and livability for everyone.

Thank you for your attention and consideration.

Warm regards,

Beth Orozco

1261 Bryant Place
(310)614-8333

From: HOWARD L SOFEN <hsofen@g.ucla.edu>
Date: Monday, October 20, 2025 at 9:38 AM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Subject: MCHS Lighting Project

[WARNING]: This email originated from outside of MBUSD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Superintendent Murakawa-Leopard,

I am writing to express my opposition to the Mira Costa High School Field Renovation, Lighting Improvement, and Facilities Master Plan Project for the following reasons:

- ***Light pollution:*** *The brightness from current lights already impacts homes. Additional or upgraded lighting would only exacerbate this.*
- ***Noise:*** *Evening events brings excessive noise late into the night, disrupting families and children.*
- ***Traffic and parking****: Our streets have not increased and not equipped to handle the increase in cars. Lack of parking leads to congestion and safety issues.*

This project does not reflect the needs or wishes of the community. I strongly urge the district to reconsider and halt this project until a more inclusive and transparent process can be conducted and one that genuinely takes into account the residents' concerns and interests

Sincerely,
Howard Sofen
1531 Curtis Avenue, MB

310-502-6247

From: Jacqueline Sanders <jacquelinesand@gmail.com>
Date: Monday, October 20, 2025 at 10:02 PM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>, Tina Shivpuri <TShivpuri@mbusd.org>, Jen Dohner <JDohner@mbusd.org>, Wysh Weinstein <WWeinstein@mbusd.org>, Cathey Graves <CGraves@mbusd.org>, MBUSD Superintendent <Superintendent@mbusd.org>, Jennifer Fenton <JFenton@mbusd.org>
Cc: Michael Sanders <mikew.sanders@gmail.com>
Subject: 1280 Keats Steet MB

Good Evening Ms. Murakawa and Board,

I am writing on behalf of my neighbors, Jacqueline and Luis Sherman. They have lived on 1280 Keats Street for over 50 years. Unfortunately Luis is battling brain cancer, but even through this they have asked me to make sure their voices are heard. They have never seen so much traffic and congestion then they have seen since the fields and school have been redone. On a daily basis, someone blocks their driveways and parking is impossible for their children coming to visit. Attached please find their comments and please add them to the record. Please acknowledge receipt of this email.

Jacqueline & Luis Sherman

Commentary Against the Installation of Eight 70-Foot Field Lights in a Residential Area

We strongly oppose the installation of eight 70-foot-tall stadium lights at the high school field, particularly given the district's intent to rent the fields from **5:00 a.m. to 11:00 p.m., seven days a week**. This project prioritizes revenue over the health, safety, and well-being of the surrounding community.

This neighborhood is **residential**, not a commercial sports complex. The introduction of such massive lighting structures would permanently alter the character of the area, flooding nearby homes with intrusive glare and creating constant light pollution late into the night. Families who chose to live here did so for peace, community, and safety—not to live next to a facility that operates like a stadium.

The district's proposed rental hours—spanning 18 hours a day—are entirely unreasonable. That level of use would bring **constant traffic, noise, and parking congestion**, disrupting residents' ability to enjoy their own property. Early morning practices and late-night games would disturb children, working adults, and seniors alike.

Moreover, the ecological impact cannot be ignored. Bright artificial lighting harms local wildlife, disrupts bird migration patterns, and affects pollinators and nocturnal animals that rely on natural light cycles. The cumulative effects of light pollution extend beyond aesthetics—they affect both human and environmental health.

If the district's motivation is financial, there are other ways to raise funds that don't involve turning a neighborhood school into a business operation at the expense of residents. Public schools exist to serve their communities, not exploit them.

Our home values would decrease due to all the above points.

Residents deserve transparency, respect, and protection from overdevelopment in their own neighborhood.

From: Jamie Spyra <jamie.spyra@gmail.com>
Date: Monday, October 20, 2025 at 10:10 AM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Subject: Mira Costa Stadium Lights Project

[WARNING]: This email originated from outside of MBUSD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi,

I live right behind the Mira Costa football stadium. The lights actually shine right into my bedroom window. I have young kids currently at Pennekamp. I'm happy there is money getting put into the school. I am concerned that some of these projects aren't actually for the kids. The lights at the stadium are on well past 10pm sometimes. There are adults playing on these fields. I want to make sure there is a hard cut off time for these lights to go off. I understand the need for exceptions like when a high school football game goes into overtime. We need to be realistic about how these evening sports that are not school related are affecting the nearby residents and our property values.

Thank you,
Jamie Spyra

From: Sonia Nazario <sonia@sonianazario.com>
Date: Monday, October 20, 2025 at 5:20 PM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Subject: Strenous objection to proposed additional/new lights, added hours of field operations at Mira Costa High

Dear Deputy Superintendent Murakawa,

I am deeply upset as a local resident living just a block from Mira Costa High that people further than 500 feet from the school were not alerted to a hearing about proposed changes to lighting and hours of operation of the sports fields at Mira Costa High.

As someone who lives on Curtis Ave. basically a block away and am already impacted by the lighting and noise from events at these facilities, particularly in the evening, we should have been given notice that a hearing was going to take place on this issue.

What's more, your document, "*NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT*

AND NOTICE OF PUBLIC SCOPING MEETING FOR THE MIRA COSTA HIGH SCHOOL FIELD

RENOVATION, LIGHTING IMPROVEMENT, AND FACILITIES MASTER PLAN PROJECT*"* seems purposefully vague and designed to obfuscate.

It doesn't say how many lights you propose to add, how many additional nights you propose programming, what the hours of that programming will be, who the fields will be rented out to, etc. **No details**. This is ridiculous. How can we have an informed decision with this document?

We already put up with loud speakers blaring many nights of the month, and bright lights. You are proposing doing a lot more of the same, but without any input from the people who would be affected by this.

I am writing to express my opposition to the Mira Costa High School Field Renovation, Lighting Improvement, and Facilities Master Plan Project for the following reasons:

Light pollution: *The brightness from current lights already impacts homes. Additional or upgraded lighting would only worsen this.*

Noise: *Evening events would bring excessive noise late into the night, disrupting families and children. As many shared during the meeting, the curfew to turn off lights is not followed and lights stay on well beyond the allotted time.*

Traffic and parking: *Our streets are not equipped to handle the increase in cars. Lack of parking will lead to congestion and possible safety issues.*

Neighborhood safety: *Increased foot traffic and non-residents entering the area during evening hours raise real safety concerns.*

This project does not reflect the needs or wishes of the community. I strongly urge the district to reconsider and halt this project until a more inclusive and transparent process can be conducted and one that genuinely takes into account the residents' voices.

I also plan to bring this proposal and your completely undemocratic process to reviewing it to the attention of our city council.

Best Regards,

Sonia Nazario

From: Cindy Bandel <cbandel@verizon.net>
Date: Tuesday, October 21, 2025 at 8:42 AM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>
Cc: Steve Bandel <srbandel@verizon.net>
Subject: Concern with Mira Costa HS Stadium Lights Project

[WARNING]: This email originated from outside of MBUSD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

To the District Office,

We are long-time residents of Manhattan Beach who have lived in our home close to Mira Costa High School for more than 40 years. We are concerned with the proposed new lighting project as it will negatively impact us in terms of light pollution, noise, traffic, and parking. We do not want to bring more people and groups into our neighborhood, especially during nighttime hours. If lighting is added, we do not want to see outside organizations using these west fields. We urge the district to reconsider this project and, at a minimum, assure us that we, as nearby residents, are involved in the various decisions made during planning, the development of guidelines, and enforcement of established rules.

We would appreciate being included in all email communications related to this project.

Please confirm receipt of this email message.

Sincerely,

Cindy and Steve Bandel

1301 Curtis Ave (corner of Curtis and Meadows)

Email: cbandel@verizon.net

From: Jacqueline Sanders <jacquelinesand@gmail.com>
Date: Tuesday, October 21, 2025 at 1:45 PM
To: Dawnalyn Murakawa-Leopard <dmurakawa@mbusd.org>, Tina Shivpuri <TShivpuri@mbusd.org>, Cathey Graves <CGraves@mbusd.org>, Jen Dohner <JDohner@mbusd.org>, MBUSD Superintendent <Superintendent@mbusd.org>, Jennifer Fenton <JFenton@mbusd.org>, Wysh Weinstein <WWeinstein@mbusd.org>
Cc: Michael Sanders <mikew.sanders@gmail.com>, REALTOR Marcell Lennon <marcellshomes@gmail.com>, Sally Andrade <sandrade90266@gmail.com>
Subject: Comments to add on the record for MBUSD Lighting Project

Dear Ms. Murakawa and Board Members,

After continued research and advice, there are more concerns regarding the light project, which residents in East Manhattan Beach are opposed to. Please confirm you received them and that you will be adding them to the record. They are attached to this email.

Thank you,
Jacqueline & Michael Sanders

Public Comment on Environmental Report – Mira Costa High School Field Lighting Project

Submitted to: Manhattan Beach Unified School District
Subject: Opposition to Installation of Eight 70-Foot Lights at Mira Costa Practice Fields
From: Concerned Resident of 1281 Keats Street, Manhattan Beach, CA

---

1. Aesthetics and Lighting

The proposed installation of eight 70-foot-tall field lights around the practice fields will cause substantial light pollution and visual intrusion into nearby homes.

- There are already functional stadium lights at Mira Costa High School that support night games and large events. Adding more lights to the practice fields is unnecessary and excessive.
- The lighting will disrupt residents' sleep cycles, reduce night sky visibility, and negatively impact the character of the surrounding residential neighborhood.
- These tall light poles will remain visible day and night, altering the community's visual landscape and diminishing property values.

Request: The District should provide lighting simulations and glare studies from multiple neighborhood vantage points, including rear yards and second-story windows of adjacent homes.

---

2. Noise and Activity Levels

Extending field use until late evening hours will significantly increase noise from crowds, whistles, loudspeakers, and vehicle movement. This is incompatible with a residential area that depends on quiet evening hours.

Request: The EIR should include a clear analysis of projected noise levels after dark and compare them with current baseline conditions.

---

3. Traffic and Circulation

Traffic congestion around Mira Costa is already a serious issue, particularly on weekends and during athletic events.

- Please disclose the **dates, times, and duration** of the traffic study.

- Was the study conducted on weekends or during school holidays? If not, the data are not representative.
- Residents experience the *worst* congestion and parking overflow on weekends, when tournaments and rentals are most frequent.

Request: The EIR should conduct additional weekend traffic studies to accurately reflect the real impact of field lighting and extended facility use

4. Parking and Access

The Environmental Report fails to adequately address parking shortages around the high school. Neighborhood streets are already heavily impacted during events.

Request: The District must specify where additional vehicles will park, how overflow parking will be managed, and whether resident-only parking zones will be considered as mitigation.

---

5. Public Services and Restroom Facilities

Nighttime field use will increase demand for restrooms and sanitation services.

- If no new bathrooms are proposed, where will attendees go?
- Portable restrooms are not an acceptable long-term solution for a residential area.

Request: The EIR must include a sanitation and maintenance plan before approval.

---

6. Alternatives Analysis

The report should consider **alternative locations** for lighted practice fields, such as other district campuses or community facilities that are not bordered by dense residential housing.

Request: Please assess whether other schools in the district can accommodate evening use with less impact.

---

7. Land Use and Planning

The proposed lighting contradicts the existing residential character and community expectations of East Manhattan Beach. The use of these lights primarily to **rent fields for revenue** constitutes a commercial operation within a residential zone.

Request: The EIR should clearly distinguish between student-related use and external rental or revenue-generating activities, and evaluate their cumulative impacts.

---

8. Socioeconomic and Financial Transparency

Residents have a right to understand the financial motivations behind this project.

Request: Please disclose:

- How much MBUSD currently earns annually from field rentals.
- How frequently the fields are rented.
- Projected increases in rental income and usage if new lighting is approved.

---

9. Historical Context

Approximately ten years ago, a previous Environmental Report resulted in a decision **not to install lights** on the practice fields.

Request: We ask the District to release that prior report and explain what conditions have changed to justify reversing that earlier determination.

---

10. Biological and Health Impacts

Artificial lighting at this scale will disrupt local wildlife patterns and harm the natural ecosystem. It will also negatively affect residents' circadian rhythms, contributing to sleep disturbance and associated health problems.

Request: The EIR should include studies addressing the biological and health effects of extended nighttime lighting exposure.

Conclusion

The installation of 70-foot lights around the practice fields would impose significant aesthetic, environmental, traffic, and health burdens on surrounding residents. The community respectfully requests that MBUSD:

- Reconsider this project,
- Provide full transparency regarding prior reports and financial motivations, and
- Pursue less intrusive alternatives that preserve the neighborhood's quality of life.

Sincerely,
Jacqueline & Michael Sanders

1281 Keats Street, Manhattan Beach

Manhattan Beach Unified School District

MIRA COSTA HIGH SCHOOL FIELD RENOVATION, LIGHTING IMPROVEMENT, AND FACILITIES MASTER PLAN PROJECT

September 2025 | Initial Study



PLACEWORKS

September 2025 | Initial Study

MIRA COSTA HIGH SCHOOL FIELD RENOVATION, LIGHTING IMPROVEMENTS, AND FACILITIES MASTER PLAN PROJECT

Manhattan Beach Unified School District

Lead Agency Contact
Dawnalyn Murakawa-Leopard, Deputy Superintendent
325 South Peck Avenue
Manhattan Beach, California 90266
310.318.7345

Prepared by:

PlaceWorks
700 S. Flower Street, Suite 600
Los Angeles, California 90017
213.623.1443
www.placeworks.com

TABLE OF CONTENTS

1. Introduction 5
1.1 Overview 5
1.2 California Environmental Quality Act 5
1.3 Initial Study 6
1.4 Levels of Significance 7

2. Project Description 9
2.1 Project Location 9
2.2 Environmental Setting 9
2.3 Project Characteristics 10
2.4 Required Permits and Approvals 28

3. Environmental Evaluation 35
I. Aesthetics 35
II. Agriculture and Forestry Resources 37
III. Air Quality 40
IV. Biological Resources 42
V. Cultural Resources 46
VI. Energy 47
VII. Geology and Soils 49
VIII. Greenhouse Gas Emissions 52
IX. Hazards and Hazardous Materials 54
X. Hydrology and Water Quality 57
XI. Land Use and Planning 60
XII. Mineral Resources 61
XIII. Noise 62
XIV. Population and Housing 64
XV. Public Services 65
XVI. Recreation 67
XVII. Transportation 68
XVIII. Tribal Cultural Resources 70
XIX. Utilities and Service Systems 72
XX. Wildfire 75
XXI. Mandatory Findings of Significance 77

4. References 79

5. List of Preparers 81
Lead Agency 81
PlaceWorks 81

List of Figures

Figure 1 Regional Location 11
Figure 2 Local Vicinity 13
Figure 3 Aerial Photograph 15
Figure 4 Campus Site Photos 17
Figure 5 Field Site Photos 19
Figure 6 Waller Stadium Lighting Plans 21
Figure 7 West Field Lighting Plans 23
Figure 8 Noth Softball/Baseball Field Lighting Plans 29
Figure 9 South Softball/Baseball Field Lighting Plans 31
Figure 10 Facilities Master Plan 33

List of Tables

Table 1 Proposed Changes to Campus Buildings 26
Table 2 Proposed Event Schedule with Proposed Lighting 27

ENVIRONMENTAL CHECKLIST

PROJECT INFORMATION

Project Title: Mira Costa High School Field Renovation, Lighting Improvements, and Facilities Master Plan Project

Lead Agency Name and Address:
Manhattan Beach Unified School District
325 South Peck Avenue
Manhattan Beach, CA 90266

Contact Person and Phone Number:
Dawnalyn Murakawa-Leopard, Deputy Superintendent
310.318.7345

Project Location: The Mira Costa High School campus is at 1401 Artesia Boulevard (Assessor's Parcel Number 4168-002-906) in the City of Manhattan Beach. The project site is bounded by Artesia Boulevard to the south, S. Peck Avenue to the east, S. Meadows Avenue to the west, and residential homes and the Manhattan Beach Unified School District building to the north. The campus is mainly surrounded by residential neighborhoods to the north, south, east, and west.

Project Sponsor's Name and Address:
Manhattan Beach Unified School District
325 South Peck Avenue
Manhattan Beach, CA 90266

General Plan Designation: Public Facilities (PF)

Zoning: Public Facilities (PF)

Description of Project:
The proposed project would replace existing field lights at the Waller Football Stadium in the northeast quadrant of the campus; install new field lights at the West Field in the northwest quadrant of the campus; and install new field lights on the softball/baseball fields in the southwest quadrant of the campus. The project would also include the installation of two new e-bike parking area, and improvements identified in the District's Mira Costa High School

Facilities Master Plan, which includes demolition, new construction, modernization, and renovation of buildings and facilities on campus.

Surrounding Land Uses and Setting:
Residential neighborhoods surround the project to the north, south, east, and west. Parcels to the north are zoned for Planned Development (PD) and Residential Single-Family (RS). Parcels to the east and west are zoned RS. Parcels to the south are in the city of Redondo Beach and are zoned Single Family Residential and Parks and Open Space.

Other Public Agencies Whose Approval Is Required (e.g., Permits, Financing Approval, or Participating Agreement):

- Division of the State Architect (Approval of Construction Drawings)

Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

The District prepared letters addressed to each Native American Tribe from the Native American Heritage Commission Tribal Consultation List. Outreach letters were sent to tribal representatives initiating consultation with tribes pursuant to Assembly Bill (AB) 52.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklist in each topical section.

☒ Aesthetics	☐ Agriculture / Forestry Resources	☒ Air Quality
☐ Biological Resources	☒ Cultural Resources	☐ Energy
☒ Geology / Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology / Water Quality	☐ Land Use / Planning	☐ Mineral Resources
☒ Noise	☐ Population / Housing	☐ Public Services
☐ Recreation	☒ Transportation	☒ Tribal Cultural Resources
☐ Utilities / Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

9/15/2025
Date

Dawnalyn Murakawa-Leopard

Deputy Superintendent

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1. INTRODUCTION

1.1 OVERVIEW

The Manhattan Beach Unified School District (MBUSD or District) seeks to replace existing field lights at the Waller Football Stadium in the northeast quadrant of the Mira Costa High School campus; install new field lights at the West Field in the northwest quadrant of the campus; and install new field lights on the softball/baseball fields in the southwest quadrant of the campus. The project would also include the installation of two new e-bike parking area and improvements identified in the District's Mira Costa High School Facilities Master Plan (FMP), which includes demolition, new construction, modernization, and renovation of buildings and facilities on campus (proposed project).

In compliance with the California Environmental Quality Act (CEQA), the District, as lead agency, is preparing the environmental documentation for the Mira Costa High School Field Renovation, Lighting Improvements, and Facilities Master Plan Project (proposed project) to determine whether approval of the requested discretionary actions and subsequent development would have a significant impact on the environment. As defined by Section 15063 of the CEQA Guidelines, an Initial Study is prepared primarily to provide the lead agency with the information to use as the basis for determining whether an environmental impact report (EIR), negative declaration, or mitigated negative declaration (MND) would provide the necessary environmental documentation and clearance for the proposed project.

1.2 CALIFORNIA ENVIRONMENTAL QUALITY ACT

The environmental compliance process is governed by the California Environmental Quality Act (CEQA) and the CEQA Guidelines (Public Resources Code [PRC], section 21000 et seq.; California Code of Regulations [CCR], Title 14, sections 15000 et seq.). CEQA was enacted in 1970 by the California Legislature to disclose to decision-makers and the public the significant environmental effects of projects and to identify ways to avoid or reduce the environmental effects through feasible alternatives or mitigation measures. Compliance with CEQA applies to California government agencies at all levels: local, regional, and State agencies, boards, commissions, and special districts (such as school districts and water districts). The Manhattan Beach Unified School District is the lead agency for the proposed project and is therefore required to conduct an environmental review to analyze the potential environmental effects associated with the proposed project.

PRC Section 21080(a) states that analysis of a project's environmental impact is required for any "discretionary projects proposed to be carried out or approved by public agencies…." In this case, the lead agency has determined that an Initial Study is required to determine whether there is substantial evidence that construction and operation of the proposed project would result in environmental impacts.

A "project" means the whole of an action that has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following:

- An activity directly undertaken by any public agency including but not limited to public works construction and related activities clearing or grading of land, improvements to existing public structures, enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100 to 65700.
- An activity undertaken by a person which is supported in whole or in part through public agency contacts, grants, subsidies, loans, or other forms of assistance from one or more public agencies.
- An activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies. (14 CCR section 15378[a]).

The proposed discretionary actions by the project applicant constitute a "project" because the activity would result in a direct physical change in the environment and would be undertaken by a public agency. All "projects" in the State of California are required to undergo an environmental review to determine the environmental impacts associated with implementation of the project.

1.3 INITIAL STUDY

The purpose of the Initial Study is to 1) provide the lead agency with information to use as the basis for deciding the proper type of CEQA document to prepare; 2) enable the lead agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a negative declaration; 3) assist in the preparation of an EIR if one is required; 4) facilitate environmental assessment early in the design of a project; 5) provide documentation of the factual basis for the findings in a mitigated negative declaration (MND) or negative declaration (ND); 6) eliminate unnecessary EIRs; and 7) determine if a project is covered under a previously prepared EIR. When an Initial Study identifies the potential for immitigable significant environmental impacts, the lead agency must prepare an EIR (14 CCR section 15064); however, if all impacts are found to be less than significant or can be mitigated

to a less-than-significant level, the lead agency can prepare an ND or an MND, which incorporates mitigation measures (14 CCR section 15070).

1.4 LEVELS OF SIGNIFICANCE

The following terminology is used to describe the level of significance of impacts. Although the criteria for determining significance are different for each topic area, the environmental analysis applies a uniform classification of the impacts based on definitions consistent with CEQA and the CEQA Guidelines:

- **No impact.** The project would result in no adverse effect on the environment.
- **Less than significant.** The project would not exceed the established significance criteria.
- **Less than significant with mitigation incorporated.** The project would exceed the established significance criteria without mitigation measures, but one or more mitigation measures would reduce the impact to a less-than-significant level successfully.
- **Potentially significant.** The project would exceed the established significance criteria, and either no feasible mitigation measures are available to reduce the impact to a less-than-significant level, or more analysis is needed to determine if feasible mitigation measures are available to reduce the impact to a less-than-significant level. If any impact is identified as potentially significant, an EIR is required.

Mitigation Measures. If, after incorporation and implementation of federal, State, and local regulations, there are still significant environmental impacts, then feasible and project-specific mitigation measures are required to reduce impacts to less-than-significant levels. Mitigation measures must further reduce significant environmental impacts above and beyond compliance with federal, State, and local laws and regulations. Mitigation under CEQA Guidelines Section 15370 includes:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

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2. PROJECT DESCRIPTION

2.1 PROJECT LOCATION

2.1.1 Regional Setting

The project site is in the city of Manhattan Beach (see Figure 1, *Regional Location*). Manhattan Beach is a coastal city in the southwestern portion of Los Angeles County. It lies along the Pacific Ocean and is part of the South Bay region, bordered by El Segundo to the north, Hermosa Beach to the south, and Hawthorne and Redondo Beach to the south and east. Regional access to the project site would be provided by Interstate(I-) 405, I-105, and State Route (SR-) 91.

2.1.2 Local Setting

The Mira Costa High School campus (campus) is at 1401 Artesia Boulevard (Assessor's Parcel Number 4168-002-906) in Manhattan Beach (project site). The project site is bounded by Artesia Boulevard to the south, S. Peck Avenue to the east, S. Meadows Avenue to the west, and residential homes and the Manhattan Beach Unified School District building to the north. The campus is mainly surrounded by residential neighborhoods to the north, south, east, and west (see Figure 2, *Local Vicinity*).

2.2 ENVIRONMENTAL SETTING

2.2.1 Existing Land Use

The project site is zoned and has a General Plan land use designation of Public Facilities (PF). The existing campus serves 9th through 12th graders and had a student enrollment of 2,568 for the 2023-2024 academic year (CDE 2025). The campus consists of general academic buildings, a multipurpose and food service building, athletic complex and gymnasium, Waller Stadium and West Field, baseball/softball fields, auditorium and small theater, tennis courts, a swimming pool, an administration building, and a central quad with an amphitheater. See Figure 2, *Aerial Photograph*; Figure 3, *Campus Site Photos*; and Figure 4, *Field Site Photos*.

2.2.2 Surrounding Land Use

Residential neighborhoods surround the project to the north, south, east, and west. The MBUSD office building is directly north of the project site. Parcels to the north are zoned for Planned Development (PD) and Residential Single-Family (RS). Parcels to the east and west are zoned RS. Parcels to the south are in Redondo Beach and are zoned Single Family Residential and Parks and Open Space.

2.3 PROJECT CHARACTERISTICS

2.3.1 Project Background

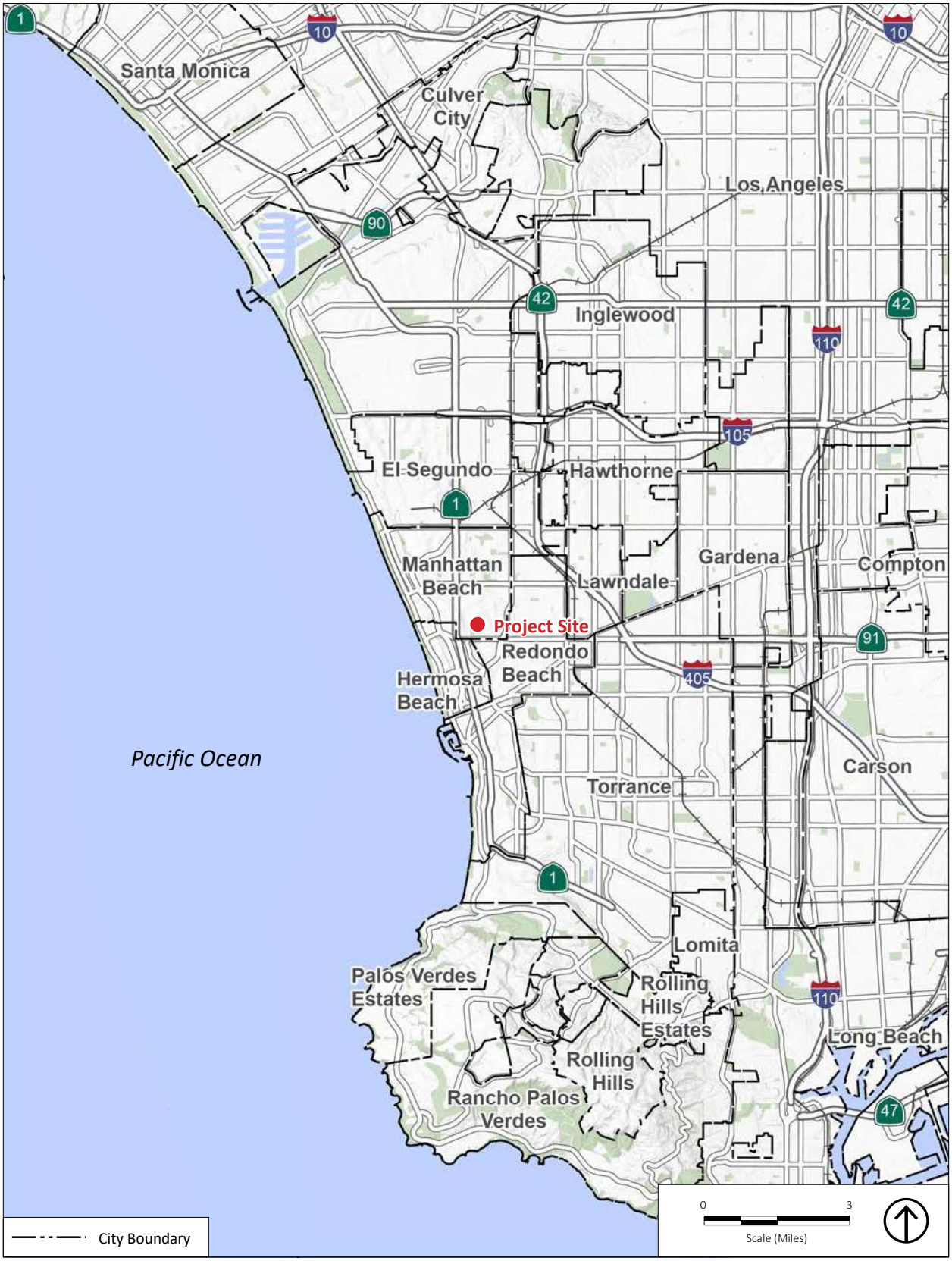
The project would replace existing field lights at the Waller Football Stadium in the northeast quadrant of the campus; install new field lights at the West Field in the northwest quadrant of the campus; and install new field lights on the softball/baseball fields in the southwest quadrant of the campus. The project would also include the installation of two new e-bike parking area on campus, and include various improvements identified in the District's Mira Costa High School Facilities Master Plan (FMP). The project site includes the entire 37-acre campus. The proposed project would not increase student enrollment or capacity at the athletic fields or on the main campus and would not include improvements to the fields or athletic amenities beyond the proposed new field lighting. The proposed project would not result in significant changes to programming beyond extending current practice times into evening hours, which would not extend beyond 10:00 pm. Below is a discussion of each component of the proposed project.

2.3.2 Lighting Improvements

The project would replace existing field lights at the Waller Football Stadium in the northeast quadrant of the campus; install new field lights at the West Field in the northwest quadrant of the campus; and install new field lights on the softball/baseball fields in the southwest quadrant of the campus. See Figure 6, *Waller Stadium Lighting Plans*; Figure 7, *West Field Lighting Plans*; and Figure 8, *Softball/Baseball Field Lighting Plans*.

Waller Stadium encompasses 3.6 acres with a 15,000-square-foot (sf) seating section. Existing lights at Waller Stadium would be removed and replaced with 48 new lighting fixtures on four existing poles that range from 90 to 100 feet in height (see Figure 6, *Waller Stadium Lighting Plans)*.

West Field is approximately 3.1 acres and would include the installation of eight new lighting poles that would hold 36 new lighting fixtures. Heights for the new poles would range from 60 to 70 feet (see Figure 7, *West Field Lighting Plans)*.



Source: Generated using ArcMap 2025.

Figure 1
Regional Location

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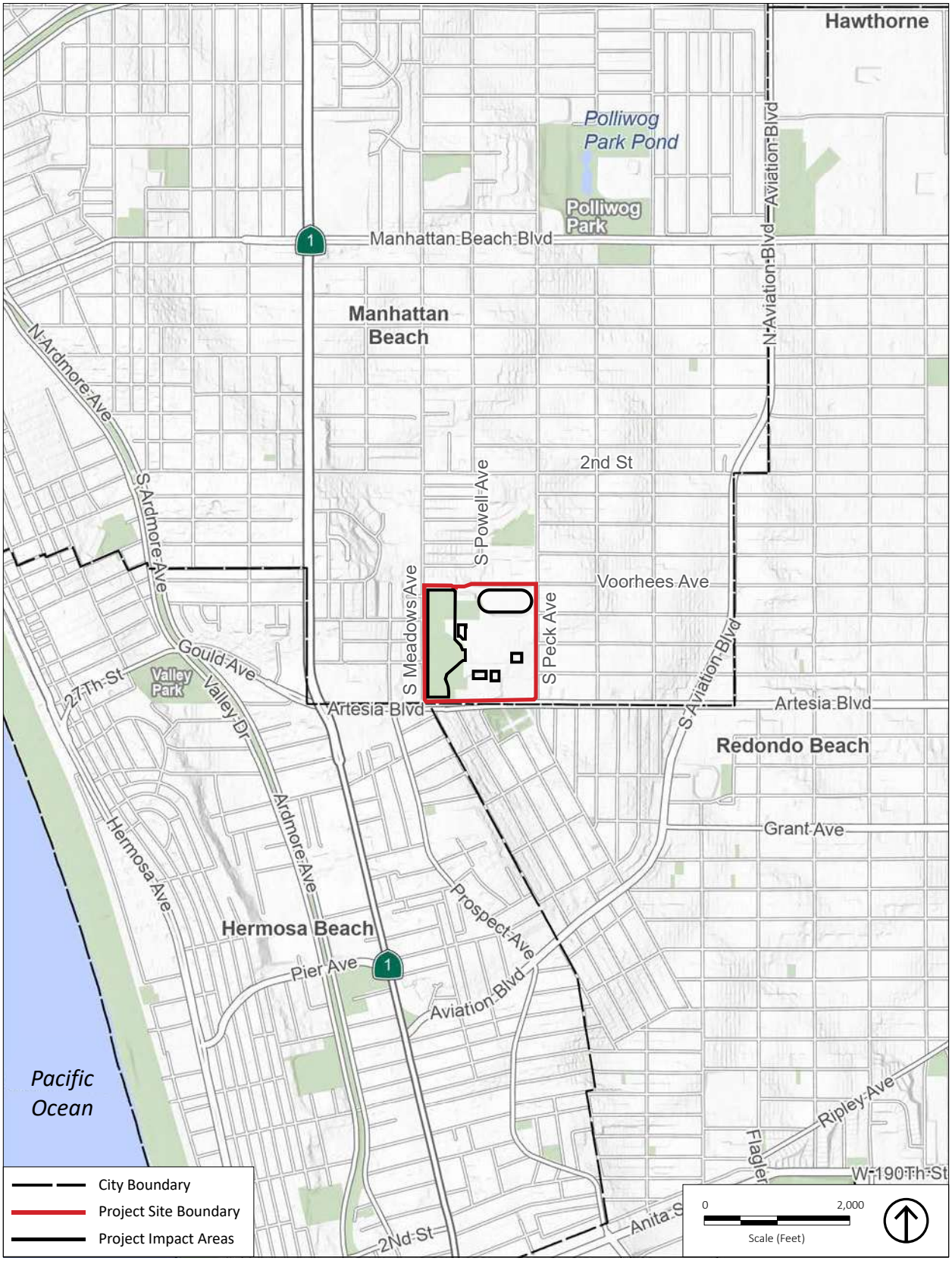

Source: Generated using ArcMap 2025.

Figure 2
Local Vicinity

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Source: Nearmap 2025.

Figure 3
Aerial Photograph

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Photo 1 – From the southern end of campus, looking north at the Administration building on the project site.



Photo 2 – From the western end of the student quad, looking northeast at the student quad and classroom buildings.



Photo 3 – From the southern end of the student quad, looking south at the library and classroom building.



Photo 4 – From the northern end of the student quad, looking northeast at the classroom buildings.



Photo 5 – From east of the Mira Costa Student Store, looking east at a student quad, student newspaper and MB-X building.



Photo 6 – From the northern portion of the eastern staff parking lot, looking south at the Math and Science classroom building, and the loading dock to the cafeteria building, and the eastern staff parking lot.



Photo 7 – From northern portion of campus, looking east at the old and new history classroom buildings (V and U), and the facilities and operations/ ceramics/ media classroom building.



Photo 8 – From the northern end of the campus swimming pool, looking southeast at the campus swimming pool.



Photo 9 – From the western end of the southeastern student/staff parking lot, looking west at the auditorium.

Source: PlaceWorks 2025.

Figure 4
Campus Site Photographs

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Photo 10 – From north of the facilities and operations building, looking northwest at the track and field on the project site, and the gymnasium.



Photo 11 – From the northeast end, looking southwest at the track and field, gymnasium, and multi-purpose room on the far right.



Photo 12 – From the southwest end of the gymnasium, looking northwest at the soccer field, and storage containers at the West Field.



Photo 13 – From the southwestern end of the West Field, looking northeast at the baseball field, fencing, and soccer fields.



Photo 14 – Looking southeast from the baseball field, on the project site.



Photo 15 – On the southeastern corner of the baseball field, looking southwest at the softball field.

Source: PlaceWorks 2025.

Figure 5
Field Site Photographs

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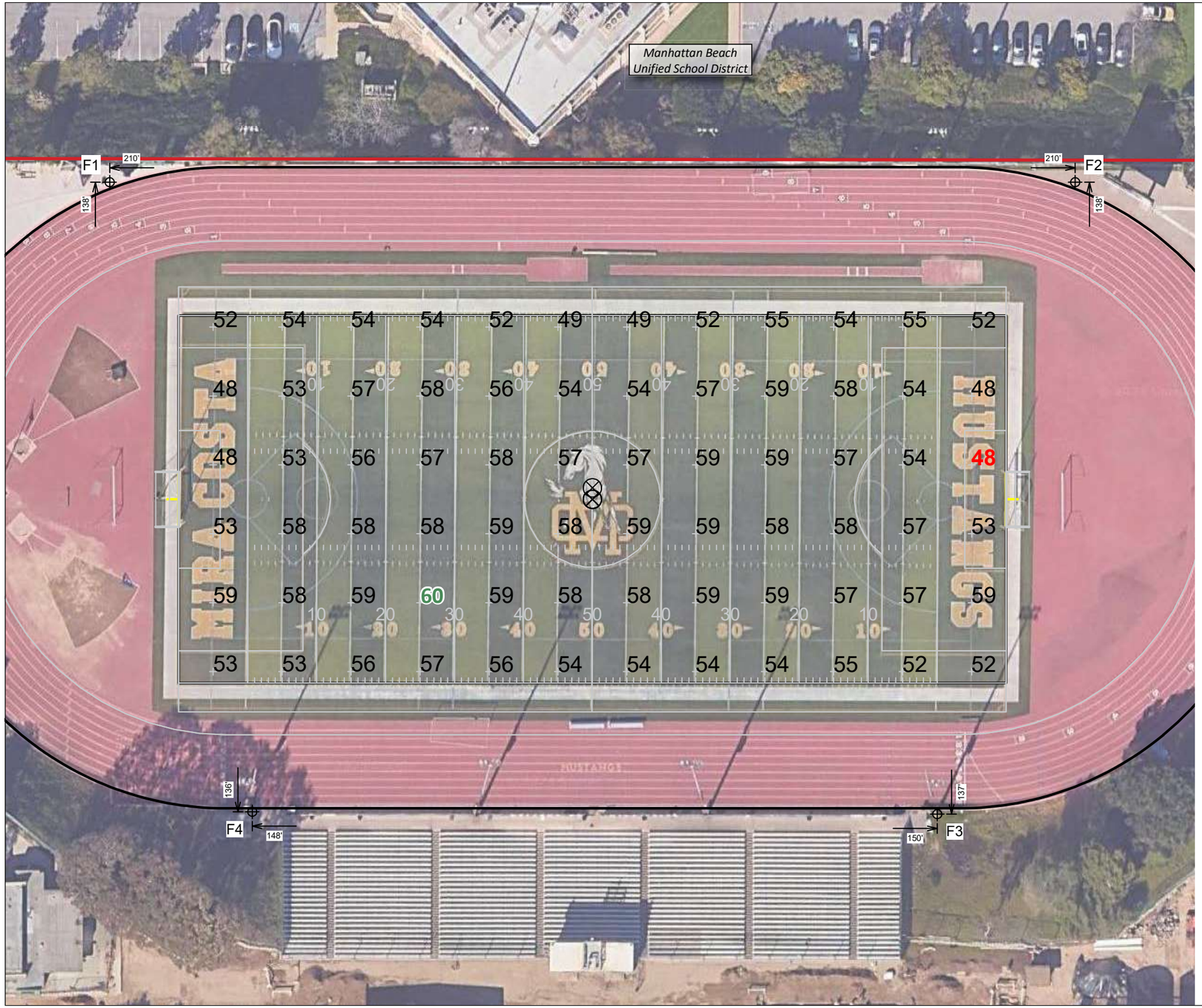

Mira Costa High School Football Stadium

Manhattan Beach,CA

Grid Summary

Name	**Football**
Size	360' x 160'
Spacing	30.0'
Height	3.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Guaranteed Average	**50**
Scan Average	55.5
Maximum	60
Minimum	48
Avg/Min	1.16
Guaranteed Max/Min	**2**
Max/Min	1.25
UG (adjacent pts)	1.13
CU	0.51
No. of Points	72
LUMINAIRE INFORMATION	
Applied Circuits	A
No. of Luminaires	**44**
Total Load	55.36 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	100'	-	100'	TLC-LED-1500	9	9	0
				15.5'	TLC-BT-575	2	2	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	0	2
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	0	2
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	44	4

*Above Grade level relative to the field.
*This structure utilizes a back-to-back mounting configuration.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Project Site Boundary

0 50
Scale (Feet)

Source: MUSCO 2024.

Figure 6
Waller Stadium Lighting Plans

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Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name	**Soccer**
Size	360' x 210'
Spacing	30.0' x 30.0'
Height	3.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average	**21.5**
Maximum	26.7
Minimum	11.0
Avg/Min	1.96
Max/Min	**2.43**
UG (adjacent pts)	1.43
CU	0.63
No. of Points	84
LUMINAIRE INFORMATION	
Applied Circuits	A
No. of Luminaires	**28**
Total Load	22.68 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
				16'	TLC-BT-575	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-900	1	1	0
				16'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
8	Totals					28	28	0

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Project Site Boundary

0 60
Scale (Feet)

Source: MUSCO 2023.

Figure 7
West Field Lighting Plans

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At the baseball/softball fields, four new lighting poles would be installed on the southwest baseball/softball field that would hold 20 new lighting fixtures. Heights for the new poles would range from 60 to 70 feet. On the northwest baseball/softball field, eight new lighting poles would be installed that would hold 48 new light fixtures. Heights for the new poles would range from 70 to 80 feet (see Figures 8 and 9, *North* and *South Softball/Baseball Field Lighting Plans,* respectively). The softball/baseball fields encompass 4.6 acres.

2.3.3 E-Bike Parking

The proposed project would also include the installation of two new electric bike (e-bike) parking areas, which would be to the east of the existing baseball/softball field and west of the existing fire lane and would accommodate 384 e-bikes. In addition, a smaller space in the entry courtyard near the administration building and to the west of the auditorium would accommodate an additional 38 e-bikes. The addition of the e-bike parking area is not anticipated to increase the number of e-bikes on campus but would provide a safe, central area for e-bike parking, which currently does not exist on campus.

2.3.4 Facilities Master Plan

A facilities master plan (FMP) is a long-term strategic plan that outlines the vision for the physical development of a school campus. It serves as a blueprint to guide future growth, renovations, and improvements over a period of time. The proposed project would make various improvements identified in the District's Mira Costa High School FMP, which includes demolition, new construction, modernization, and renovation of buildings and facilities on campus as well as other site improvements (see Figure 10, *Facilities Master Plan*).

As listed in Table 1, *Proposed Changes to Campus Buildings*, the buildings from the FMP that would be evaluated within the scope of this EIR would include the demolition of the existing one-story library and the construction of a new one-story library; the renovation of 2 one-story buildings, the renovation of the existing swimming pool, and the renovation of the existing one-story multipurpose room and food service building. The proposed FMP would not increase student enrollment or capacity.

Table 1 Proposed Changes to Campus Buildings

Buildings	Type of Construction	Square Feet
Existing Buildings		
One-Story Library	Demolition	10,500
2 One-Story Classroom Buildings	Renovation	11,600 (5,800 each)
One-Story Multi-purpose and Food Service Building	Renovation	29,500
Swimming Pool	Renovation	8,800
Proposed Buildings		
One-Story Library	New Construction	20,000
2 One-Story Classroom Buildings	Renovation	11,600 (5,800 each)
One-Story Multi-purpose and Food Service Building	Renovation	32,000
Source: MBUSD 2025.		

2.3.5 Field Use and Scheduling

No changes to the event schedule or activity use would occur at Waller Stadium, only upgrades to the existing field lighting fixtures. Similarly, no changes to the number or types of events at the softball/baseball fields are proposed. Table 2, *Proposed Event Schedule*, shows the additional activities and number of events at the West Field in addition to the number of existing events.

Currently the southern portion of the West Field—called the "End Cap"—accommodates 171 events per year, 7 days a week, 12 months out of the year, with start and end times ranging from 9:00 am to 8:00 pm and attendance ranging from 20 to 30 people per event. Under the proposed project, the End Cap would accommodate an additional 320 events per year, 7 days a week, 12 months out of the year, with start and end times ranging from 9:00 am to 9:00 pm, and attendance would range from 20 to 40 people per event. In summary, the number of events at the End Cap would increase by 320 events, and end times would extend from 8:00 pm to 9:00 pm under the proposed project.

Table 2 Proposed Event Schedule with Proposed Lighting

Activity/Use	Number of Events	Months of the Year	Days of the Week	Start Time	End Time	Attendance
End Cap						
Soccer Practices	80	6	5	7 pm	9 pm	30
Soccer Games	40	6	5	7 pm	9 pm	40
Lacrosse Practice	40	6	5	7 pm	9 pm	40
Soccer Practices	80	6	5	6 pm	9 pm	30
Soccer Games	40	6	2	6 pm	9 pm	40
Lacrosse Practice	40	9	2	6 pm	9 pm	40
Total Proposed Events	**320**	-	-	-	-	-
Existing Events	***171***	-	-	-	-	-
Total Events	**491**	-	-	-	-	-
West Field						
Youth Football: BCS	40	6	5	7 pm	9 pm	40
Lacrosse: LA Select	40	6	5	7 pm	9 pm	40
Soccer: Sand and Surf	40	6	5	7 pm	9 pm	40
Youth Football: BCS	40	6	5	6 pm	9 pm	40
Lacrosse: LA Select	40	6	5	6 pm	9 pm	40
Soccer: Sand and Surf	40	6	5	6 pm	9 pm	40
Youth Football: BCS	6	6	2	7 pm	9 pm	40
Lacrosse: LA Select	6	6	2	7 pm	9 pm	40
Soccer: Sand and Surf	6	6	2	7 pm	9 pm	40
Youth Football: BCS	6	6	2	6 pm	9 pm	40
Lacrosse: LA Select	6	6	2	6 pm	9 pm	40
Soccer: Sand and Surf	6	6	2	6 pm	9 pm	40
Total Proposed Events	**276**	-	-	-	-	-
Existing Events	***318***	-	-	-	-	-
Total Events	**594**	-	-	-	-	-
Source: MBUSD 2025.						

Currently, West Field (not including the End Cap) accommodates 318 events per year, one to seven days a week, 12 months out of the year, with start and end times ranging from 9:00 am to 9:00 pm and attendance ranging from 40 to 400 people. Under the proposed project, West Field would accommodate 276 additional events per year, seven days a week, 12 months out of the year, with start and end times ranging from 9:00 am to 9:00 pm and attendance ranging from 40 to 400 people. In summary, the numbers of events at West Field would increase by 276 events, and end times would extend from 8:00 pm to 9:00 pm under the proposed project. Attendance at the new events proposed in the West Field would average 40 people per event.

2.3.6 Construction

The proposed lighting improvements to Waller Stadium, West Field, and the softball/baseball field would be installed in one phase within a three-month period. Selected projects proposed under the FMP would be constructed over the next five years (see Table 1, *Proposed Changes to Campus Buildings*).

2.4 REQUIRED PERMITS AND APPROVALS

Public agencies whose approval is expected to be required in the form of permits, financing approval, or participation agreements are as follows:

- Manhattan Beach Unified School District
- Division of the State Architect (Approval of Construction Drawings)



Mira Costa High School Baseball/ Softball
Manhattan Beach,CA

GRID SUMMARY

Name:	**Baseball**
Size:	Irregular 260' / 345' / 306'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	51.45	32.36
Maximum:	60	47
Minimum:	38	25
Avg / Min:	1.35	1.30
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.57	1.88
UG (adjacent pts):	1.40	1.53
CU:	0.72	
No. of Points:	25	96

LUMINAIRE INFORMATION

Applied Circuits:	A
No. of Luminaires:	**48**
Total Load:	50.57 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	-	70'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	3	3	0
1	B1	80'	-	80'	TLC-LED-900	1/1*	2	0
				15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1500	5	5	0
1	B2	80'	-	80'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1500	5	5	0
2	C1-C2	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	3	3	0
2	D1-D2	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	4	4	0
8	TOTALS					48	48	0

*This structure utilized a back-to-back mounting configuration.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Project Site Boundary

0 60
Scale (Feet)

Source: MUSCO 2022.

Figure 8
Softball/Baseball Lighting Plans North

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Mira Costa High School Baseball/ Softball
Manhattan Beach,CA

GRID SUMMARY

Name:	**Softball**
Size:	Irregular 202' / 217' / 193'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	51.20	33.32
Maximum:	58	46
Minimum:	38	20
Avg / Min:	1.35	1.68
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.54	2.33
UG (adjacent pts):	1.29	1.56
CU:	0.64	
No. of Points:	25	76

LUMINAIRE INFORMATION

Applied Circuits:	B
No. of Luminaires:	**20**
Total Load:	22.5 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-900	2	2	0
2	B3-B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	5	5	0
4	TOTALS					20	20	0

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Project Site Boundary

0 40
Scale (Feet)

Source: MUSCO 2022.

Figure 9
Softball/Baseball Lighting Plans South

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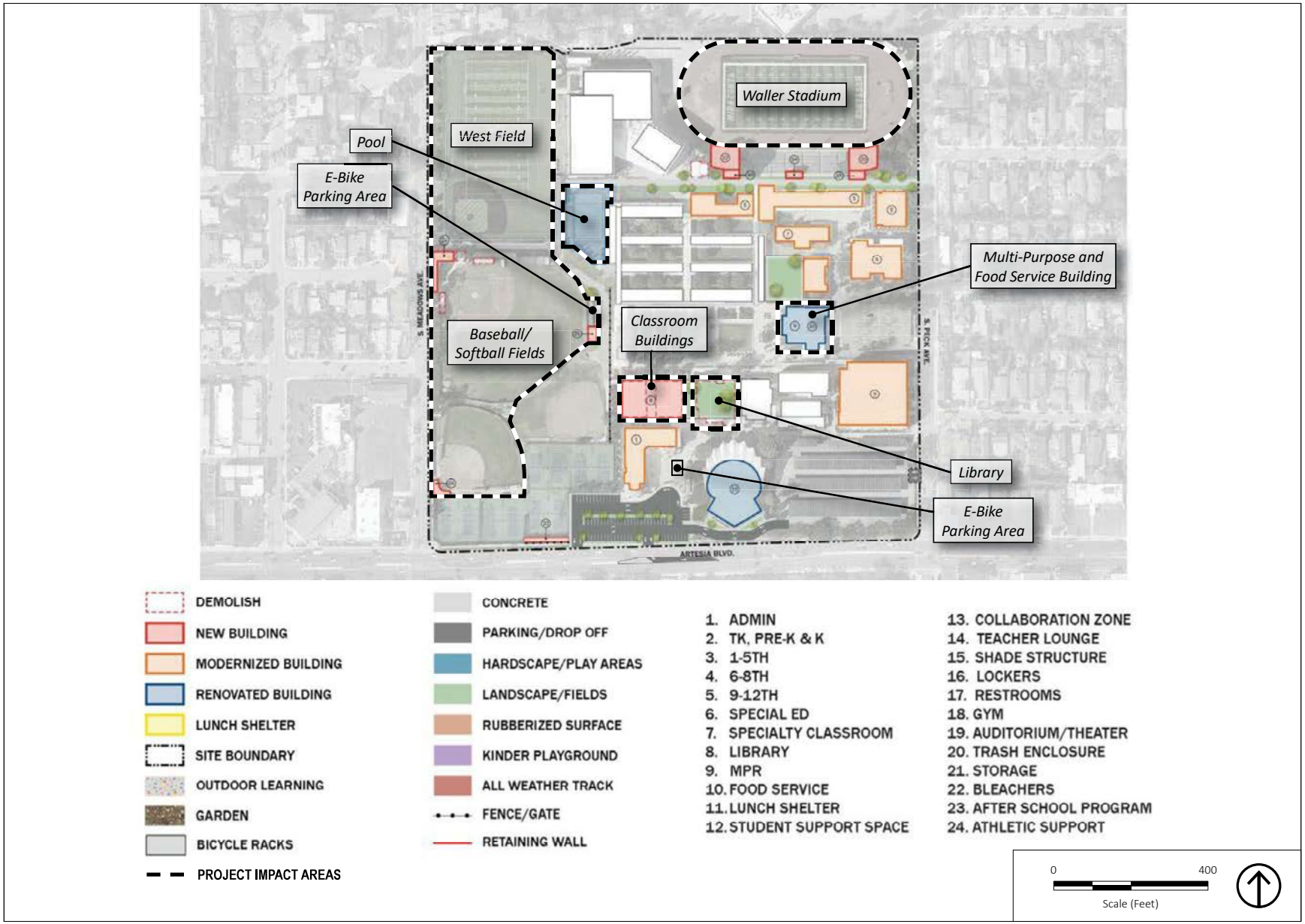

Figure 10
Facilities Master Plan

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3. ENVIRONMENTAL EVALUATION

This section includes a checklist for each environmental topic, evaluates the significance criteria in the checklists, and, if necessary, provides mitigation measures to reduce potential impacts.

I. Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

Issues	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
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?	☐	☐	☐	☒
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☒	☐	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☒	☐	☐	☐

DISCUSSION

a) ***Would the proposed project have a substantial adverse effect on a scenic vista?***

No Impact. The project site is in a highly urbanized and developed area of the city and surrounded primarily by residential uses. The topography in Manhattan Beach consists of rolling hills and coastal areas along the beaches that provide direct scenic vistas of the developed

coastline. However, there are no designated scenic vistas or other scenic resources within Manhattan Beach (Manhattan Beach 2003). Views in the project area include residential neighborhoods and other school facilities. The proposed project would replace existing field lights at the Waller Football Stadium in the northeast quadrant of the campus; install new field lights at the West Field in the northwest quadrant of the campus; and install new field lights on the softball/baseball fields in the southwest quadrant of the campus. The project would also include the installation of two new e-bike parking area and improvements identified in the District's Mira Costa High School FMP, which includes demolition, new construction, modernization, and renovation of buildings and facilities on campus. Therefore, future improvements and development pursuant to the proposed project would not impact any scenic vistas in the project area or the region. No impact would occur, and no further analysis is required in the EIR.

b) ***Would the proposed project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?***

No Impact. The State Scenic Highway System involves highways, mainly state highways, which have been designated by the California Department of Transportation (Caltrans) as scenic highways. There are no officially designated state scenic highways or eligible state scenic highways that traverse Manhattan Beach (Caltrans 2023). Therefore, no impact would occur within a state scenic highway with buildout pursuant to the proposed project, and no further analysis is required in the EIR.

c) ***Would the proposed project, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?***

Potentially Significant Impact. The proposed project would replace existing field lights at the Waller Football Stadium in the northeast quadrant of the campus; install new field lights at the West Field in the northwest quadrant of the campus; and install new field lights on the softball/baseball fields in the southwest quadrant of the campus. The project would also include the installation of two new e-bike parking area, and improvements identified in the District's Mira Costa High School Facilities Master Plan, which includes demolition, new construction, modernization, and renovation of buildings and facilities on campus, as identified in Table 1 *Proposed Changes to Campus Buildings*, of Section 2.3.4, *Facilities Master Plan*. Impacts may occur if the proposed project is inconsistent with regulations pertaining to scenic quality. This issue will be further discussed in the EIR.

d) ***Would the proposed project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?***

Potentially Significant Impact. The project would replace existing field lights at the Waller Football Stadium, install new field lights at the West Field, and install new field lights on the softball/baseball fields. Waller Stadium encompasses 3.6 acres with a 15,000-square-foot (sf) seating section. Existing lights at Waller Stadium would be removed and replaced with 48 new lighting fixtures on four existing poles that range from 90 to 100 feet in height (see Figure 6, *Waller Stadium Lighting Plans*). West Field is approximately 3.1 acres and would include the installations of eight new lighting poles with 36 new lighting fixtures. Heights for the new poles would range from 60 to 70 feet (see Figure 7, *West Field Lighting Plans)*.

At the baseball/softball fields, four new lighting poles would be installed on the southwest baseball/softball field with 20 new lighting fixtures. Heights for the new poles would range from 60 to 70 feet. On the northwest baseball/softball field, eight new lighting poles would be installed with 48 new light fixtures. Heights for the new poles would range from 70 to 80 feet (see Figures 8 and 9, *North* and *South Softball/Baseball Field Lighting Plans*). Because the installation of new poles may result in an increase in lighting and glare in the project area, impacts resulting from the proposed project will be further discussed in the EIR.

II. Agriculture and Forestry Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

DISCUSSION

a) ***Would the proposed project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?***

No Impact. The Farmland Mapping and Monitoring Program produces maps and statistical data for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status and is divided into five categories: Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, Unique Farmland, and Grazing Land. According to the Farmland Mapping and Monitoring Program, the project site is mapped as "Urban and Built-up Land" (DOC 2025a). The project site is in an urbanized area and surrounded by primarily by residential uses. The project site is zoned and has a General Plan land use designation of Public Facilities (PF). The project site does not contain any farmland and would not disturb any type of farmland. Therefore, the proposed project would not convert Prime

Farmland, Unique Farmland, or Farmland of Statewide Importance to a nonagricultural use, and no impact would occur and no further analysis in the EIR is warranted.

b) ***Would the proposed project conflict with existing zoning for agricultural use, or a Williamson Act contract?***

No Impact. Williamson Act contracts restrict the use of privately owned land to agriculture and compatible open-space uses under contract with local governments; in exchange, the land is taxed based on actual use rather than potential market value. According to the California Williamson Act Enrollment Finder there is no Williamson Act contract in effect on the project site (DOC 2025b). Therefore, the project would not conflict with an existing Williamson Act contract, and no impact would occur and no further analysis in the EIR is warranted.

c) ***Would the proposed project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?***

No Impact. The project site is zoned and has a General Plan land use designation of Public Facilities (PF). The proposed project would not change the zoning designation of the existing campus and would not impact any lands zoned for forestland and timberland uses. The project site is developed within the Mira Costa HS campus, and no forested land or timberland exists on-site. Therefore, development of the proposed project would not conflict with existing zoning for forest land, timberland, or land zoned timberland production, and no impact would occur.

d) ***Would the proposed project result in the loss of forest land or conversion of forest land to non-forest use?***

No Impact. The project site would be entirely within the boundaries of the Mira Costa HS campus. No forest land uses are present on-site nor in the immediate vicinity. Development of the proposed project would not require any changes to the existing environment that could result in the conversion of forest land into non-forest use. Therefore, no impact would occur and no further analysis in the EIR is warranted.

e) ***Would the proposed project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?***

No Impact. The project site would be entirely within the boundaries of the Mira Costa HS campus. No significant forest land uses or farmland are present on-site or in the immediate vicinity. Construction of the proposed project would occur within the boundaries of the Mira Costa HS campus and would not disturb any type of farmland. Construction and operation of the proposed project would not result in any changes to the existing environment that could

result in the conversion of farmland into nonagricultural uses or forest land to non-forest use. Therefore, no impact would occur and no further analysis in the EIR is warranted.

III. Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☒	☐	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☒	☐	☐	☐

DISCUSSION

a) *Would the proposed project conflict with or obstruct implementation of the applicable air quality plan?*

Potentially Significant Impact. The City of Manhattan Beach is in the South Coast Air Basin (SoCAB) and is subject to the air quality management plan (AQMP) prepared by the South Coast Air Quality Management District (AQMD). Implementation of the proposed project would potentially generate criteria air pollutants that have the potential to increase the severity of the nonattainment designation of the SoCAB or exceed the assumptions of the South Coast AQMD's AQMP. Potential impacts associated with consistency with the AQMP will be further analyzed in the EIR.

b) ***Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?***

Potentially Significant Impact. The SoCAB is designated nonattainment for ozone (O_3) and fine particulate matter ($PM_{2.5}$) under the California and National Ambient Air Quality Standards (AAQS), nonattainment for particulate matter (PM_{10}) under the California AAQS, and nonattainment for lead (Pb) under the National AAQS (CARB 2018). Construction or operational phases of future infill and redevelopment pursuant to the proposed project may have the potential to exceed the South Coast AQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the SoCAB. Any project that produces a significant project-level regional air quality impact in a nonattainment area adds to the cumulative impact. Due to the extent of the SoCAB area and the number of cumulative project emissions, a project would be cumulatively significant when project-related emissions exceed the South Coast AQMD regional significance emissions thresholds (SCAQMD 1993). Therefore, air quality impacts of the proposed project will be further discussed in the EIR.

c) ***Would the proposed project expose sensitive receptors to substantial pollutant concentrations?***

Potentially Significant Impact. Air pollutant emissions associated with future development pursuant to the proposed project would occur over the short term from construction activities, and over the long term from project-generated vehicle trips and stationary sources. During construction activities, off-road equipment exhaust and fugitive dust have the potential to elevate concentrations of air pollutants at on- and off-site sensitive receptors. Air pollutant emissions generated by the proposed project will be evaluated against South Coast AQMD's localized significance thresholds (LST). During operation, on-road emissions from vehicles traveling to and from the project site have the potential to generate elevated concentrations of carbon monoxide (CO) at congested intersections. Localized impacts from project-related construction and operational activities will be examined further in the EIR.

d) ***Would the proposed project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

Potentially Significant Impact. Air pollutant emissions would occur over the short term for site preparation and construction activities of future development, and over the long term associated with project-related vehicle trips generated during operation. The EIR will evaluate the increase in air pollutant emissions generated by construction and operation of the proposed project against South Coast AQMD's regional significance thresholds. Mitigation measures will be recommended, if applicable, to minimize the proposed project's contribution to air pollutant emissions in the SoCAB. This issue will be further discussed in the EIR.

IV. Biological Resources

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

DISCUSSION

a) ***Would the proposed project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

No Impact. Special status species include those listed as endangered or threatened under the federal Endangered Species Act or California Endangered Species Act; species otherwise given certain designations by the California Department of Fish and Wildlife; and plant species listed as rare by the California Native Plant Society.

The project site is on the developed campus of Mira Costa HS campus in an urbanized area of Manhattan Beach. The surrounding land uses are entirely built up and include residential neighborhoods, streets, and other school facilities. The site is paved, landscaped, and actively maintained, with no natural open space, native vegetation, or sensitive habitat types present.

A review of available data from the California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) Inventory indicates that no special-status plant or wildlife species have been documented within the project site or its immediate vicinity (CNDDB 2024; CNPS 2025). The site is not located within any designated critical habitat, wildlife corridor, or conservation area, nor does it support features such as riparian zones, vernal pools, or coastal scrub that would provide habitat for listed species.

Due to the absence of suitable habitat and the site's fully developed condition, the proposed project would not result in direct or indirect impacts to any species identified as a candidate, sensitive, or special-status species under federal, state, or local jurisdiction. Therefore, no impact would occur and no further analysis in the EIR is warranted.

b) ***Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

No Impact. Sensitive natural communities are natural communities that are considered rare in the region by regulatory agencies; that are known to provide habitat for sensitive animal or plant species; or are known to be important wildlife corridors. The project site is entirely developed and distributed within a developed area. It does not contain any riparian habitat, wetlands, coastal sage scrub, or other sensitive natural communities recognized by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS).

A review of the CNDDB and regional habitat maps confirms that the site is not located within or adjacent to any mapped sensitive habitat areas. The site is also not subject to any local Habitat

Conservation Plans or Natural Community Conservation Plans (HCP/NCCP) (CDFW 2025). No federally designated critical habitat exists on site or in the vicinity of the project site (USFWS 2024a). Thus, the project site does not contain any riparian habitat or other sensitive natural community, and the project would not impact the riverine habitat or other sensitive natural community. Therefore, no impacts to riparian habitat or other sensitive natural communities would occur and no further analysis in the EIR is warranted.

c) ***Would the proposed project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?***

No Impact. The project site is on the developed campus of Mira Costa HS campus. The nearest mapped wetlands are the Ballona Wetlands Ecological Reserve approximately six miles northeast of the project site (USFWS 2024b). There are no mapped wetlands within the project site or immediate surroundings.

Construction-related activities would occur within the project site. As further discussed in Section 3.10, *Hydrology and Water Quality*, the proposed project would prepare a Storm Water Pollution Prevention Plan that would include best management practices (BMP) to properly manage stormwater during construction of the proposed project. Further, stormwater generated by the proposed project would be routed to existing stormwater infrastructure on-site. During operational phase, the proposed project would adhere to the requirements of the State Water Resources Control Board's Trash Amendments, site design, and source control BMPs, as described in Section 3.10(a).

Therefore, given the distance between the proposed project and the off-site riparian habitat, compliance with regulatory compliance measures, and incorporation of best management practices, the proposed project would not affect the off-site riverine habitat. Thus, the proposed project would not have a substantial adverse effect on protected wetlands, and no impacts would occur. No further analysis in the EIR is warranted.

d) ***Would the proposed project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?***

No Impact. The project site is located within the fully developed campus of Mira Costa HS, situated in the urbanized community of Manhattan Beach. The surrounding land is composed entirely of urban development, including residential neighborhoods, roads, and commercial infrastructure. There is no natural habitat or open space in or adjacent to the project site that would support wildlife movement or serve as a corridor or nursery site.

The site is not within or near any mapped or designated wildlife corridors, regional conservation areas, or known migratory routes. The nearest significant open space supporting wildlife

movement is the Ballona Wetlands Ecological Reserve approximately six miles northwest of the site. However, no hydrological or biological connection exists between Mira Costa HS and the wetlands.

The proposed project does not include the removal of existing trees on campus and would not disturb nesting birds that are protected by the Migratory Bird Treaty Act. Due to the disturbed and developed nature of the project site and surrounding urban development, the project site is not an essential wildlife corridor. Additionally, the proposed project would be confined within the boundaries of the previously disturbed Mira Costa HS campus and would not result in any new impacts to wildlife corridors or native wildlife nursery sites. Therefore, impacts would be less than significant impact and no further analysis in the EIR is warranted.

e) ***Would the proposed project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***

No Impact. The project site is within the fully developed campus of Mira Costa HS, situated in the urbanized community of Manhattan Beach. The City of Manhattan Beach does not currently have a formal Tree Preservation Ordinance or other adopted local policy specifically protecting native or heritage trees on public school property. Furthermore, there are no local or regional conservation plans applicable to the site that would impose restrictions on landscaping or vegetation removal. Therefore, the proposed project would not conflict with any local policies or ordinances protecting biological resources. No impact would occur and no further analysis in the EIR is warranted.

f) ***Would the proposed project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?***

No Impact. The project site is developed within the existing Mira Costa HS campus. The proposed project is not within an identified HCP/NCCP (CDFW 2025). The proposed project would not impact any HCP/NCCP, or other approved local, regional, or state conservation plan. Therefore, no impact would and no further analysis in the EIR is warranted.

V. Cultural Resources

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☒	☐	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☒	☐	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☒	☐	☐	☐

DISCUSSION

a) ***Would the proposed project cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?***

Potentially Significant Impact. Section 15064.5 defines historic resources as resources listed or determined to be eligible for listing by the State Historical Resources Commission, a local register of historical resources, or the lead agency. Generally a resource is considered "historically significant" if it meets one of the following ceria:

i) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

ii) Is associated with the lives of persons important in our past;

iii) Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values;

iv) Has yielded, or may be likely to yield, information important in prehistory or history.

Future development pursuant to the proposed project could adversely impact potentially eligible historical resources. As part of the EIR, a Historic Evaluation will be conducted to assess potential impacts to historic resources. This issue will be further discussed in the EIR.

b) ***Would the proposed project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?***

Potentially Significant Impact. No known significant archaeological sites or resources exist in the city (Manhattan Beach 2003), which is highly developed and has been subject to extensive subsurface disruption. Nonetheless, future development pursuant to the proposed project could have ground-disturbing activities, such as grading or excavation, with the potential to unearth undocumented subsurface archaeological resources. As part of the EIR, a cultural resources records search will be conducted to assess potential impacts to archaeological resources. This issue will be further discussed in the EIR.

c) ***Would the proposed project disturb any human remains, including those interred outside of dedicated cemeteries?***

Potentially Significant Impact. The project site is in a highly urbanized area with past ground disturbance. While discovery of human remains is unlikely given this disturbance, future development pursuant to the proposed project has the potential to disturb human remains during ground-disturbing activities such as grading or excavation. This issue will be further discussed in the EIR.

VI. Energy

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

DISCUSSION

a) ***Would the proposed project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?***

Less than Significant. The proposed project is located on the existing Mira Costa High School campus in Manhattan Beach, within a fully urbanized area served by existing utility infrastructure. The proposed project would replace existing field lights at the Waller Football Stadium, install new field lights at the West Field, and install new field lights on the softball/baseball fields. The project would also include the installation of two new e-bike parking area and includes demolition, new construction, modernization, and renovation of buildings and facilities on campus as part of the District FMP. The proposed project would not increase student enrollment or capacity at the athletic fields or on the main campus.

The project would result in an incremental increase in electricity use due to nighttime operation of the lighting system. However, the field lighting would consist of energy-efficient LED fixtures, consistent with current California Energy Code (Title 24) standards and CALGreen requirements. Additionally, the project would be connected to the existing electrical grid, and no off-grid energy generation or new utility infrastructure would be required.

Any construction associated with the project would be short term and small in scale and would involve standard equipment and methods that are subject to California's stringent fuel and emissions standards, including the California Air Resources Board (CARB) anti-idling regulations and the California Energy Code (Title 24). During operation, the project would not introduce new energy-intensive land uses, significantly increase demand for electricity or natural gas, or require infrastructure upgrades beyond what is already in place. The project would comply with applicable energy efficiency regulations under the California Green Building Standards Code (CALGreen) and local building codes.

Overall, the project would not result in wasteful, inefficient, or unnecessary energy use, and would be consistent with applicable statewide energy efficiency regulations. Therefore, the impact related to energy consumption would be considered less than significant. No further analysis in the EIR is warranted.

b) ***Would the proposed project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?***

Less than Significant. The proposed project involves the installation and operation of updated and new field lighting on the Mira Costa HS campus athletic fields, the installation of two new e-bike parking area, and the demolition, new construction, modernization and renovation of buildings and facilities on campus as part of the District FMP. The lighting system would utilize energy-efficient LED fixtures, which are consistent with modern performance standards for

reduced power consumption, long service life, and minimized light pollution. The project would comply with California Energy Code (Title 24), California Green Building Standards Code (CALGreen), and relevant Southern California Edison (SCE) efficiency initiatives.

In addition, the project would not interfere with the implementation of the State of California's renewable energy goals under Senate Bill 100 (SB 100) or the City of Manhattan Beach Climate Action and Adaptation Plan (CAAP), which encourages the use of efficient systems and responsible energy use. If necessary, the lighting could be programmed to minimize energy use during non-operational hours, further supporting local conservation goals.

As the field and building lighting would be designed and operated in accordance with applicable energy efficiency standards and would not interfere with any state or local renewable energy or energy efficiency plans, the project's impact would be considered less than significant. No further analysis in the EIR is warranted.

VII. Geology and Soils

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☒	☐	☐	☐

DISCUSSION

a) ***Would the proposed project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:***

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

Less Than Significant Impact. The Alquist-Priolo Earthquake Fault Zone Map (Inglewood Quadrangle) indicates no known earthquake faults or any substantial evidence of a known fault within the city (Manhattan 2003). Southern California is a seismically active region. Impacts

from ground shaking could occur many miles from an earthquake epicenter. The degree of ground shaking in the city is dependent on the particular fault, fault location, distance from the city, and magnitude of the earthquake. However, future development pursuant to the proposed project would be subject to existing buildings codes and standards to ensure impacts from ground shaking would be minimized. Therefore, impacts would be less than significant and no further analysis is required in the EIR.

b) ***Would the proposed project result in substantial soil erosion or the loss of topsoil?***

Less Than Significant Impact. The project site is currently developed, and future development pursuant to the proposed project would be subject to compliance with the National Pollutant Discharge Elimination System (NPDES) standards and implementation of best management practices (BMP) to minimize short- and long-term erosion. Therefore, impacts would be less than significant and no further analysis is required in the EIR.

c) ***Would the proposed project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?***

Less Than Significant Impact. The project site is currently developed and in an area that is not within a designated landslide hazard zone, liquefaction zone, or area with known unstable soils (CGS 2025). Future development pursuant to the proposed project would be subject to compliance with the National Pollutant Discharge Elimination System (NPDES) standards and implementation of BMPs to minimize short- and long-term erosion. Additionally, standard construction practices and compliance with applicable building codes, including the California Building Code, would ensure the project is designed and constructed to withstand local soil and seismic conditions. Therefore, impacts would be less than significant and no further analysis is required in the EIR.

d) ***Would the proposed project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?***

Less Than Significant Impact. Future development pursuant to the proposed project would be subject to compliance with the NPDES standards and implementation of BMPs to minimize short- and long-term erosion. All future development would need to comply with the California Building Code, undergo review by the Division of the State Architect, and adhere to any recommendations made from registered geotechnical engineers. Therefore, impacts would be less than significant and no further analysis is required in the EIR.

e) ***Would the proposed project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?***

No Impact. The Sanitation Districts of Los Angeles County own, operate, and maintain trunk sewer lines for the regional conveyance of wastewater, and the City is responsible for the operation and maintenance of the local sewer lines. Future development in the city would connect to the existing wastewater infrastructure. Because Manhattan Beach is fully urbanized and sewers are available for the disposal of wastewater, the use of septic tanks or alternative wastewater disposal systems would not be required. Therefore, no impact would occur, and no further analysis is required in the EIR.

f) ***Would the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?***

Potentially Significant Impact. The project site is in a highly urbanized area of Manhattan Beach. The city does not contain unique geologic features and is not known to contain documented paleontological resources (Manhattan Beach 2003). Given the geology of the city, it is unlikely that the proposed project would encounter unique paleontological resources. Nonetheless, future development pursuant to the proposed project could have the potential to unearth undocumented subsurface paleontological resources. This issue will be further discussed in the EIR.

VIII. Greenhouse Gas Emissions

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

DISCUSSION

a) ***Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?***

Less Than Significant Impact. The proposed project involves the installation of updated and new field lighting on an existing high school campus, the installation of two new e-bike parking

area, and improvements identified in the District's Mira Costa High School FMP, which includes select demolition, new construction, and modernization and renovation of buildings and facilities on campus. The project would not generate significant greenhouse gas (GHG) emissions either directly or indirectly. As listed in Table 1, *Proposed Changes to Campus Buildings*, of Section 2.3.4, *Facilities Master Plan*, the buildings from the FMP that would be evaluated would include the demolition of the existing one-story library and the construction of a new one-story library, the renovation of 2 one-story classroom buildings, the renovation of the existing swimming pool and the renovation of the one-story multipurpose room and food service building. The proposed project would not result in new vehicular trips, long-term operational energy demand, or land use changes that could meaningfully increase GHG emissions. Any short-term emissions associated with construction activities (e.g., trenching, equipment use) would be temporary, minor, and localized, and would not exceed regional thresholds established by the South Coast Air Quality Management District. Field lighting would incorporate energy-efficient LED technology, which minimizes energy consumption and associated emissions.

The proposed project would not increase student enrollment or capacity that would substantially alter the school's carbon footprint. Therefore, impacts would be less than significant, and no further analysis in the EIR is warranted.

b) ***Would the proposed project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?***

Less Than Significant Impact. The proposed project would not conflict with any applicable plan, policy, or regulation adopted to reduce GHG emissions.

The project consists of field lighting and facilities improvements within an existing school campus and would not introduce new development that increases long-term GHG emissions; change land uses; increase population or vehicle miles traveled (VMT); or conflict with state, regional, or local climate action or sustainability plans.

The City of Manhattan Beach and the State of California have adopted policies to promote energy efficiency and reduce GHG emissions (e.g., SB 32, Executive Order B-55-18, and the California Air Resources Board's Scoping Plan). The project is minor in scope and consistent with these objectives—particularly if energy-efficient lighting technologies such as LED fixtures are used. Therefore, impacts would be less than significant and no further analysis in the EIR is warranted.

IX. Hazards and Hazardous Materials

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
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 result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

DISCUSSION

a) ***Would the proposed project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?***

Less Than Significant Impact. The proposed project is not anticipated to result in significant amounts of hazardous materials being transported, used, or disposed of in conjunction with future development. The buildings that are to be renovated or demolished as part of the proposed project, contain asbestos containing materials. However, the proposed project would comply with applicable regulations—including a pre-construction asbestos survey, abatement by licensed professionals, and adherence to hazardous waste transport and disposal requirement. Any potential materials associated with future uses would be utilized and stored in compliance with established State and federal requirements. All future development on the project site would be subject to compliance with existing regulations, standards, and guidelines established by federal, State, and local agencies related to storage, use, and disposal of hazardous materials. Therefore, no significant impacts would occur, and no further analysis is warranted in the EIR.

b) ***Would the proposed project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?***

Less Than Significant Impact. The proposed project is not anticipated to create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment. The project would be subject to compliance with all applicable federal, State, and local laws and regulations pertaining to the transport, use, disposal, handling, and storage of hazardous waste, reducing the likelihood and severity of accidents during transit. There are no hazardous sites currently within the project site or immediate vicinity (DTSC 2025). Therefore, impacts would be less than significant, and no further analysis would be required in the EIR.

c) ***Would the proposed project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?***

Less Than Significant Impact. The project would include various improvements identified in the District's Mira Costa High School FMP and lighting improvements to Waller Stadium, West Field, and the softball/baseball fields. The proposed project would not increase student enrollment or capacity at the athletic fields or on the main campus. Future developments under the FMP would be subject to compliance with all applicable federal, State, and local laws and regulations pertaining to the transport, use, disposal, handling, and storage of hazardous waste, reducing the likelihood and severity of accidents during transit. There are no hazardous sites currently

within the project site (DTSC 2025). Therefore, impacts would be less than significant and no further analysis would be required in the EIR.

d) ***Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?***

Less Than Significant Impact. Government Code Section 65962.5 requires lists of the following types of hazardous materials sites: hazardous waste facilities; hazardous waste discharges for which the State Water Quality Control Board has issued certain types of orders; public drinking water wells containing detectable levels of organic contaminants; underground storage tanks with reported unauthorized releases; and solid waste disposal facilities from which hazardous waste has migrated. There are no hazardous sites currently within the project site (DTSC 2025). Therefore, no further analysis would be required in the EIR.

e) ***For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles or a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?***

Less Than Significant Impact. The City of Manhattan Beach is within the Los Angeles County Airport Land Use Plan. Los Angeles International Airport (LAX) is located approximately four miles north of the project site. The proposed project would not result in a safety hazard for people residing or working on the project site. Impacts would be less than significant, and no further analysis of this issue is warranted in the EIR.

f) ***Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?***

Less Than Significant Impact. The proposed project would not conflict with the City of Manhattan Beach Emergency Operations Plan. Construction activities associated with the proposed project would not impact street traffic as no roadway improvements in the public right-of-way would be necessary. Construction of the proposed project would occur within the campus boundary. The proposed project would not have the potential to interference with emergency access to the Mira Costa HS campus or surrounding area. Therefore, impacts would be less than significant, and no further analysis of this issue is warranted in the EIR.

g) ***Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?***

No Impact. The City of Manhattan Beach and the surrounding cities are entirely urbanized. There are no wildlands adjacent to urbanized areas or residencies intermixed with wildlands in the city. The project site is not in or adjacent to lands classified as high fire hazard severity zones (FHSZ). The nearest state responsibility area in a very high FHSZ is approximately seven miles

north of the project site (CalFire 2024). Therefore, the proposed project would not expose people or structures to a significant risk involving wildland fires. No impact would occur, and no further analysis of this issue is warranted in the EIR.

X. Hydrology and Water Quality

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☐	☒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☐	☒
i) result in a substantial erosion or siltation on- or off-site;	☐	☐	☐	☒
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☒
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

DISCUSSION

a) *Would the proposed project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

No Impact. The proposed project would not violate water quality standards or waste discharge requirements, nor would it substantially degrade surface or groundwater quality. The proposed project consists of field lighting improvements to an existing athletic field and improvements to select buildings associated with the Mira Costa HS FMP, with limited ground disturbance and no change in land use or impervious surface area. Any minor construction activity (e.g., trenching for wiring or pole installation) would be conducted under standard BMPs to control stormwater runoff, sedimentation, and material storage, in compliance with the Clean Water Act (CWA), the NPDES General Construction Permit, and Los Angeles Regional Water Quality Control Board guidelines. The project site is already developed and served by a municipal storm drain system; no impact to groundwater recharge or quality is anticipated. The proposed project would not generate any long-term wastewater discharge or introduce pollutants to stormwater systems beyond existing baseline conditions. No impact would occur. This issue will not be further discussed in the EIR.

b) *Would the proposed project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

No Impact. The proposed project would not substantially decrease groundwater supplies or interfere with groundwater recharge in a way that would affect sustainable management of the groundwater basin. The proposed project involves construction on an existing athletic field and school campus within a fully developed urban high school campus. It would not require any use of groundwater resources for construction or long-term operation. There would be no change in impervious surface area, no grading that alters drainage patterns, and no excavation deep enough to affect groundwater levels. The project site lies within the West Coast Groundwater Basin, managed by the West Basin Municipal Water District under a groundwater sustainability plan. Because the proposed project is limited in scope and does not involve water extraction or

significant new development, no impact to groundwater quantity, recharge, or long-term basin sustainability would occur. This issue will not be further discussed in the EIR.

c) ***Would the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:***

i) result in a substantial erosion or siltation on- or off-site;

ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv) impede or redirect flood flows?

No Impact. The proposed project would not substantially alter existing drainage patterns or introduce new impervious surfaces in a way that would result in erosion, flooding, or stormwater system impacts. No streams, rivers, or natural watercourses are located on or adjacent to the project site, and no channel modification or redirection of flood flows is proposed. The site's topography, drainage infrastructure, and surface runoff characteristics would remain unchanged. No new impervious surfaces would be created that could increase runoff volume or velocity. Any minor ground disturbance during construction (e.g., trenching for wiring or pole footings) would be temporary, limited in scale, and managed using BMPs to prevent sedimentation or erosion. The existing stormwater drainage system operated by the City of Manhattan Beach is adequately sized to serve the site, and the project would not exceed its capacity or generate polluted runoff beyond existing conditions. Therefore, no impact would occur. This issue will not be further discussed in the EIR.

d) ***Would the proposed project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?***

No Impact. The proposed project is not located within a flood hazard area, tsunami zone, or near a body of water where a seiche could occur, and therefore would not risk the release of pollutants due to inundation. According to FEMA Flood Insurance Rate Maps (FIRMs), Mira Costa High School is in Zone X, which is considered minimal flood hazard and outside of the 100- and 500-year floodplains. The project site lies well inland, over a mile from the coast, and at an elevation of approximately 120 feet above sea level and outside of the mapped tsunami inundation zone established by the California Emergency Management Agency (DOC 2025c). There are no large enclosed bodies of water, such as reservoirs or lakes, near the site that could pose a seiche risk. Additionally, the project does not include hazardous material storage or uses

that would increase risk in the event of inundation. Therefore, no impact would occur. This issue will not be further discussed in the EIR.

e) ***Would the proposed project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?***

No Impact. The proposed project would not conflict with or obstruct any applicable water quality control plan or sustainable groundwater management plan. The project site lies within the jurisdiction of the Los Angeles Regional Water Quality Control Board, which oversees implementation of the Water Quality Control Plan for the Los Angeles Basin. The proposed project involves only lighting improvements to an existing athletic field and various improvements associated with Mira Costa HS FMP, and would not affect surface or groundwater discharges. There is no grading, change in land use, or discharge that would conflict with water quality goals. The project site also lies within the West Coast Subbasin of the Los Angeles Groundwater Basin, managed by the West Basin Water District under a groundwater sustainability plan. The proposed project would not extract groundwater or alter recharge conditions and therefore would not interfere with sustainable management objectives. Because the proposed project does not involve water supply, wastewater discharge, or land alteration, it is consistent with all applicable water resource plans. Therefore, no impact would occur. This issue will not be further discussed in the EIR.

XI. Land Use and Planning

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) 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?	☐	☐	☐	☒

DISCUSSION

a) ***Would the proposed project physically divide an established community?***

No Impact. The project would include various improvements identified in the District's Mira Costa High School FMP. The proposed project would not increase student enrollment or capacity at the athletic fields or on the main campus and would not include improvements to the fields or athletic amenities beyond the proposed new field lighting and select improvements associated with Mira Costa HS FMP. The proposed project would encourage uses that are compatible with existing uses and would not divide an established community. The proposed project would be entirely within the boundaries of Mira Costa HS campus and would not physically divide existing communities. Therefore, no impact would occur, and no further analysis is required in the EIR.

b) ***Would the proposed 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?***

No Impact. As discussed above, the proposed project would install new lighting fixtures and include various improvements identified in the District's Mira Costa High School FMP. The proposed project does not include land uses changes and is consistent with the current zoning and land use designation of Public Facilities. The proposed project would not conflict with any land use plan or policy. Therefore, no impact would occur, and no further analysis is required in the EIR.

XII. Mineral Resources

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

DISCUSSION

a) ***Would the proposed project result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?***

No Impact. According to the Department of Conservation Mineral Land Classification maps, the project site is within Mineral Resource Zone 1 (MRZ-1), which is an area where adequate information indicates that no significant mineral deposits are present (DOC 2023). The city is adjacent to one of the major oil fields in the Los Angeles area; however, its resources have been largely extracted and there are no remaining active wells in the city (Manhattan Beach 2003). There are no other mineral resources with any commercial potential in the city. The project site is in a highly urbanized area and there are no active, dry, or plugged wells in the project site or immediate vicinity, nor are there any planned oil extraction activities within the project site. No oil fields or other mineral resources exist on the project site. Therefore, no impact would occur, and no further analysis is required in the EIR.

b) ***Would the proposed project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?***

No Impact. As discussed above, the project site is classified MRZ-1, which indicates that there are no significant mineral deposits present (DOC 2023). The proposed project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general land, specific plan, or other land use plan. Therefore, no impact would occur, and no further analysis is required in the EIR.

XIII. Noise

Would the project result in:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
c) For a project located within the vicinity of a private airstrip or 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?	☒	☐	☐	☐

DISCUSSION

a) ***Would the proposed project result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?***

Potentially Significant Impact. Noise that exceeds adopted thresholds may be generated during construction and operation of the proposed project. The EIR will address potential noise impacts associated with the proposed project.

b) ***Would the proposed project result in the generation of excessive groundborne vibration or groundborne noise levels?***

Potentially Significant Impact. Noise that exceeds adopted thresholds may be generated during construction of the proposed project. Thus, the proposed project has the potential to result in adverse impacts associated with groundborne noise or vibration. This issue will be further discussed in the EIR.

c) ***Would the proposed project, for a project located within the vicinity of a private airstrip or 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, expose people residing or working in the project area to excessive noise levels?***

Potentially Significant Impact. The City of Manhattan Beach is within the Los Angeles County Airport Land Use Plan. Los Angeles International Airport (LAX) is located approximately four miles north of the project site. Thus, the proposed project has the potential to expose people to excessive noise levels. This issue will be further discussed in the EIR.

XIV. Population and Housing

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

DISCUSSION

a) ***Would the proposed project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?***

No Impact. The proposed project improvements would be entirely within the boundaries of Mira Costa HS campus. The proposed project would serve the existing surrounding residents and would not increase student enrollment or capacity. Therefore, the proposed project would not directly or indirectly result in unplanned population growth. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

b) ***Would the proposed project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?***

No Impact. The proposed project does not propose any development that are intended to or that would indirectly result in displacement or demolition of any permanent or temporary residential structures. The project would include the installation of updated and new lighting and various improvements identified in the District's Mira Costa High School FMP. The proposed project would not increase student enrollment or capacity at the athletic fields or on the main campus. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

XV. Public Services

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically 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 any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

DISCUSSION

a) ***Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically 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 any of the public services:***

***Fire protection*?**

No Impact. Fire protection services are provided through Manhattan Beach Fire Department. Fire Station 1 is at 400 15th Street, approximately 1.5 miles from the project site. Mira Costa HS is within an established urban area with existing infrastructure and emergency response coverage. The proposed project would not introduce significant new population that would excess current service capacity, require the construction of a new fire station or expansion of existing facilities, or impair existing emergency response times.

The proposed project would comply with California Building Code fire safety standards, and any improvements would be subject to review by the Fire Marshal and Division of the State Architect, ensuring fire code compliance. The proposed project would not increase student enrollment or capacity. The proposed project would serve the existing population. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

Police protection?

No Impact. Mira Costa High School is served by the Manhattan Beach Police Department (MBPD), with headquarters about 1.5 miles from the school at 420 15th Street. The school is within an urbanized area that is already fully developed and equipped with adequate infrastructure and law enforcement coverage. The project would not generate a substantial increase in population or crime potential, exceed MBPD's existing staffing or facility capacities, or require the construction or expansion of police facilities.

Additionally, the Mira Costa HS campus already benefits from MBPD's School Resource Officer (SRO) program and routine patrols. The proposed project would not increase student enrollment or capacity. The proposed project would serve the existing population. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

Schools?

No Impact. The proposed project would be developed entirely with the Mira Costa HS campus and would not introduce any new residential population or generate additional student enrollment that could increase demand on the school district. The school is operated by the Manhattan Beach Unified School District, which is responsible for its long-range planning, facility management, and capacity needs. The project would not result in an increase in student population, induce residential growth that increases school enrollment, or require construction of new school facilities elsewhere in the district. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

Parks?

No Impact. Mira Costa High School is in a fully developed, urban area of Manhattan Beach that is already served by an established parks and recreation system managed by the City of Manhattan Beach Parks and Recreation Department. Nearby parks include Valley Park, less than a mile west of the project, and Polliwog Park, 1.5 miles north from the project site. The project would not increase residential population or housing density, increase local demand for public park space or recreation programs, or require the construction or expansion of park facilities.

The proposed project is on existing school property, is not growth inducing, and it would not contribute to physical impacts associated with the provision of new parkland or recreational services. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

Other public facilities?

No Impact. The project site is located in a developed urban area already served by public amenities, including Manhattan Beach Public Library at 1320 Highland Avenue, approximately 1.5 miles from the project site.

The project does not involve residential development and therefore would not introduce new population to the area, generate increased demand for library services, and would not necessitate the construction or expansion of libraries. No adverse physical changes to the environment are anticipated as a result of increased use or strain on other public facilities. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

XVI. Recreation

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

DISCUSSION

a) ***Would the proposed project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?***

No Impact. The proposed project would not increase the use of existing neighborhood or regional parks or recreational facilities in a way that could result in substantial physical deterioration.

Mira Costa HS is on an existing, fully developed school campus, and the project would not introduce new housing or population to the area, generate additional demand for public parkland or recreational resources, or increase intensity of use at surrounding public facilities.

The campus contains its own recreational amenities (e.g., athletic fields, gymnasiums, swimming pool), which are sufficient to support student needs. Any modernization or upgrades under the Mira Costa FMP are internal to campus use and would not shift recreational demand to off-site public facilities. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

b) ***Would the proposed project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?***

No Impact. The proposed project would not include the construction of new recreational facilities, or would it require the expansion of existing recreational facilities that could cause adverse environmental effects.

Any physical improvements associated with the proposed project would occur within the boundaries of the existing Mira Costa HS campus, which already includes recreational amenities such as athletic fields, a gymnasium, and open space. These facilities are intended for use by the existing student population and would not result in any substantial changes in use.

The project does not involve any off-site recreational facility development or expansion, nor does it introduce new demand that would require expansion of facilities. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

XVII. Transportation

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☒	☐	☐	☐
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	☒	☐	☐	☐

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐
d) Result in inadequate emergency access?	☒	☐	☐	☐

DISCUSSION

a) ***Would the proposed project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?***

Potentially Significant Impact. The proposed project involves lighting improvements to an existing athletic field and various improvements associated with Mira Costa HS FMP. The proposed project will be evaluated in the EIR to identify any potential conflicts with any program, plan, ordinance, or policy related to the circulation system, including those addressing transit, roadways, bicycles, or pedestrian infrastructure.

b) ***Would the proposed project conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?***

Potentially Significant Impact. The proposed project will be evaluated as part of the EIR to determine if it would conflict with or be inconsistent with CEQA Guidelines § 15064.3(b), which focuses on vehicle miles traveled (VMT) as the primary metric for analyzing transportation impacts. Although the proposed project would not generate new residential, commercial, or employment-related land, this issue will be further discussed in the EIR.

c) ***Would the proposed project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?***

Potentially Significant Impact. Although the proposed project would not result in any changes to roadway design or introduce incompatible uses that could increase transportation-related hazards, the proposed project will be evaluated as part of the EIR to identify any potential conflicts with existing circulation systems.

d) ***Would the proposed project result in inadequate emergency access?***

Potentially Significant Impact. Impacts to emergency access will be evaluated as part of this EIR to determine if the proposed project would interfere with campus drop-off and pick-up areas, driveways, or adjacent public rights-of-way.

XVIII. Tribal Cultural Resources

Would the project:

Issues	Potentially Significant Impact	Less-Than Significant Impact with Mitigation Incorporated	Less-Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	☒	☐	☐	☐
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☒	☐	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☒	☐	☐	☐

DISCUSSION

a) ***Would the proposed project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:***

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Potentially Significant Impact. There is potential for tribal cultural resources to be unearthed during ground-distributing activities associated with construction of the proposed project. Also, the District will initiate consultation with California Native American Tribes pursuant to AB 52. The potential for impacts to tribal cultural resources and the results of tribal consultation will be further discussed in the EIR.

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Potentially Significant Impact. There is potential for tribal cultural resources to be unearthed during ground-distributing activities associated with future development pursuant to the proposed project. This issue and the results of tribal consultation will be further discussed in the EIR.

XIX. Utilities and Service Systems

Would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

DISCUSSION

a) ***Would the proposed project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?***

No Impact. The proposed project would not require the construction or relocation of any major utility infrastructure that could result in significant environmental effects. The proposed project consists of field lighting improvements at an existing athletic facility within a fully developed high school campus and various improvements as part of the Mira Costa High School's FMP. Mira Costa High School receives its water services from the City of Manhattan Beach. The City is a retail water provider, distributing water supplied by the West Basin Municipal Water District (West Basin). West Basin sources water from the Metropolitan Water District of Southern California (Metropolitan), which imports water from the State Water Project and the Colorado River. Wastewater collected in Manhattan Beach is conveyed to and treated by the Los Angeles County Sanitation Districts (LACSD). Stormwater runoff from the school site is collected and conveyed through the City's municipal separate storm sewer system (MS4). Natural gas and electricity services are provided by SCE. The proposed project would connect to the existing on-site electrical infrastructure, and any minor upgrades would occur within the school property and involve minimal ground disturbance. No expansion of utility capacity is needed, and the proposed project would not trigger the need for off-site infrastructure improvements. All work would be managed under standard construction practices with no risk of significant environmental impact related to utility systems. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

b) ***Would the proposed project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?***

No Impact. The proposed project would not require additional water supplies beyond what is already provided to the existing Mira Costa HS campus, and there is no need for increased water demand that would impact regional water availability. The proposed project consists of lighting upgrades to an existing athletic field and building improvements and would not increase the number of students, staff, or campus facilities that consume water. The school is served by the West Basin Municipal Water District, which sources water from a combination of imported and recycled supplies and has prepared a Water Shortage Contingency Plan and Urban Water Management Plan ensuring adequate supplies through normal, dry, and multiple dry years. As the lighting improvements do not introduce new water demand, the existing water supply system is more than adequate to meet the needs of the project. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

c) ***Would the proposed project result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?***

No Impact. The proposed project would not generate any new wastewater and would not impact the capacity of existing wastewater treatment providers. The existing Mira Costa High School campus is connected to the City of Manhattan Beach municipal sewer system, which is

serviced by the Los Angeles County Sanitation Districts (LACSD). The wastewater treatment system has sufficient capacity to handle current and future needs of the campus, and the project would not contribute any measurable increase in flow. Because the project does not change use intensity or add water-using infrastructure, it would not affect wastewater system capacity. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

d) ***Would the proposed project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?***

No Impact. The proposed project would not generate solid waste in excess of local or state standards, nor would it exceed landfill capacity or interfere with waste reduction goals. Solid waste generated during the construction phase (e.g., packaging, minor demolition debris, excess materials) would be temporary and minimal in volume. Construction activities would comply with the City of Manhattan Beach's Construction & Demolition Debris Recycling Program, which requires contractors to divert a minimum percentage of waste from landfills in accordance with California Green Building Standards Code (CALGreen). No operational changes or intensification of site use would occur as part of the lighting or building improvements, so long-term solid waste generation would remain unchanged. Solid waste services in Manhattan Beach are managed by a contracted hauler (e.g., Waste Management or Athens Services), and the region is served by landfills with sufficient remaining capacity (e.g., Puente Hills MRF, Sunshine Canyon Landfill). The project would remain compliant with Assembly Bill 939 (California Integrated Waste Management Act) and SB 1383 related to landfill diversion and organics recycling. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

e) ***Would the proposed project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?***

No Impact. The proposed project would comply with all applicable federal, state, and local statutes and regulations related to solid waste management and reduction. During construction, solid waste generated (e.g., packaging, construction debris) would be collected and disposed of in accordance with the City of Manhattan Beach's Construction & Demolition Debris Recycling Program, which is aligned with CALGreen and AB 939 (California Integrated Waste Management Act). The project would not result in increased long-term waste generation, as it does not involve any increase in enrollment, staffing, or school operations. The project would operate in compliance with: SB 1383 (Short-Lived Climate Pollutants), requiring organics diversion, AB 341 (Mandatory Commercial Recycling), and local landfill diversion and recycling mandates enforced by the City of Manhattan Beach and LA County. Solid waste handling would continue to be managed by an authorized local waste hauler and disposed of at permitted facilities with

adequate capacity. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

XX. Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) 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?	☐	☐	☐	☒

DISCUSSION

a) *Would the proposed project substantially impair an adopted emergency response plan or emergency evacuation plan?*

No Impact. The proposed project would not impair or interfere with an adopted emergency response plan or emergency evacuation plan. The project site is located within a fully urbanized area of Manhattan Beach with established emergency access routes and public safety services. The proposed project consists of lighting and building improvements to an existing athletic field

and does not involve road closures, rerouting of traffic, or modifications to any emergency response infrastructure. All construction activities would occur on the project site and would follow City of Manhattan Beach requirements for construction safety and access.

Additionally, the proposed project is not in or near a very high fire hazard severity zone (FHSZ) and poses no wildfire evacuation risk (CalFire 2024). Emergency response planning for the area is guided by the City of Manhattan Beach Emergency Operations Plan, and this project would not conflict with its provisions. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

b) ***Would the proposed project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?***

No Impact. The proposed project would not exacerbate wildfire risks or expose individuals to pollutant concentrations or fire hazards due to terrain, wind, or related environmental conditions. The project site is in a flat, urbanized coastal area in the City of Manhattan Beach. There are no steep slopes, canyons, or adjacent wildland areas that would contribute to wildfire spread. As discussed above, the project site is not in a very high FHSZ as mapped by Cal Fire. The area is entirely within the local responsibility area (LRA) and is served by Los Angeles County Fire Department. The proposed project would not include vegetation removal, fuel load changes, or use of flammable materials. As such, the proposed project would not intensify wildfire risks or expose people to wildfire-related air pollution or hazards. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

c) ***Would the proposed project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?***

No Impact. The proposed project would not require the installation or maintenance of infrastructure that could exacerbate wildfire risk or result in ongoing environmental impacts. The proposed project would involve lighting improvements (e.g., LED field lighting and minor electrical connections) within an existing high school athletic field and building improvements associated with Mira Costa HS FMP. No new roads, fire access lanes, fuel breaks, or emergency water sources are required or proposed. While the lighting system would connect to existing on-site electrical infrastructure, the project does not involve new aboveground utility lines, which are typically associated with elevated fire risks. The site is located in a developed, non-wildland area with existing utility infrastructure and urban services. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

d) ***Would the proposed 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?***

No Impact. The proposed project would not expose people or structures to significant risks from post-fire slope instability, flooding, or landslides. The proposed project site is on flat terrain in a fully urbanized area of Manhattan Beach. The lighting and building improvements would not alter existing drainage patterns or increase surface runoff. There would be no grading or excavation beyond small-scale trenching for electrical connections. The project site is not within or near a wildfire hazard area, and there are no nearby slopes or burn-prone hillsides that could become unstable following a fire. The project site is also not in a floodplain or adjacent to downstream areas vulnerable to post-fire debris flows or erosion. Therefore, there is no risk of geologic or hydrologic hazards associated with wildfire or post-fire conditions. Therefore, no impact would occur, and this issue will not be further discussed in the EIR.

XXI. Mandatory Findings of Significance

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☒	☐	☐	☐

Issues	Potentially Significant Impact	Less-than Significant Impact with Mitigation Incorporated	Less-than Significant Impact	No Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

DISCUSSION

a) ***Does the proposed project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?***

Potentially Significant Impact. As discussed in Section 3.4, *Biological Resources*, the proposed project would not have the potential to substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal. However, impacts to historic resources may occur; impacts to cultural resource impacts will be further analyzed in the EIR.

b) ***Does the proposed project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)***

Potentially Significant Impact. Implementation of the proposed project could result in cumulative impacts to aesthetics, air quality, cultural resources, geology and soils, noise, transportation, and tribal cultural resources. Cumulative impacts of these resources will be further analyzed in the EIR.

c) ***Does the Proposed project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?***

Potentially Significant Impact. As discussed in this Initial Study, the proposed project could potentially have harmful effects on the environment, which could affect humans directly or indirectly. Impacts would be potentially significant, and these issues will be discussed in the EIR.

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5. LIST OF PREPARERS

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APPENDIX B:
LIGHTING PHOTOMETRICS



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Sports Illustrated Stadium, Harrison, New Jersey, USA



UBS Arena, Elmont, New York, USA



Iowa Women of Achievement Bridge, Des Moines, Iowa, USA



Tottenham Hotspur FC Training Ground, Tottenham, London, UK

Mira Costa High School North Field

Manhattan Beach, CA

Sales Representative: Mike Marchetti · Designed By: EFox · Design No.: 186768F · November 03, 2025

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Mira Costa High School North Field

Manhattan Beach, CA

LIGHTING SYSTEM

Structure/Fixture Summary

Structure ID	Structure Height	Fixt. Attachment Ht.	Fixture Qty	Fixture Type	Load	Circuit
A1-A2	70'	70'	4	TLC-LED-1200	4.68 kW	D
		16'	1	TLC-BT-575	0.57 kW	D
A3-A4	60'	60'	2	TLC-LED-900	1.76 kW	E
		60'	1	TLC-LED-1200	1.17 kW	E
		16'	1	TLC-BT-575	0.57 kW	E
B1	80'	80'	1	TLC-LED-900	0.88 kW	D
		80'	1	TLC-LED-900	0.89 kW	D
		80'	5	TLC-LED-1500	7.05 kW	D
		16'	1	TLC-BT-575	0.57 kW	D
B2	80'	80'	1	TLC-LED-1200	1.17 kW	D
		80'	3	TLC-LED-1500	4.23 kW	D
		80'	3	TLC-LED-900	2.64 kW	D
		16'	1	TLC-BT-575	0.57 kW	D
B3	70'	70'	3	TLC-LED-1500	4.23 kW	E
		70'	2	TLC-LED-900	1.76 kW	E
		16'	1	TLC-BT-575	0.57 kW	E
B4	70'	70'	4	TLC-LED-1500	5.64 kW	E
		70'	1	TLC-LED-1200	1.17 kW	E
		16'	1	TLC-BT-575	0.57 kW	E
C1	70'	70'	2	TLC-LED-1200	2.34 kW	D
		70'	1	TLC-LED-900	0.88 kW	D
		16'	2	TLC-BT-575	1.15 kW	D
C2	70'	70'	3	TLC-LED-1200	3.51 kW	D
		16'	2	TLC-BT-575	1.15 kW	D
D1	70'	70'	1	TLC-LED-1500	1.41 kW	D
		70'	1	TLC-LED-900	0.88 kW	D
		70'	1	TLC-LED-1200	1.17 kW	D
		16'	1	TLC-BT-575	0.57 kW	D
D2	70'	70'	1	TLC-LED-1500	1.41 kW	D
		70'	2	TLC-LED-1200	2.34 kW	D
		16'	1	TLC-BT-575	0.57 kW	D
F1-F2	100'	100'	9	TLC-LED-1500	12.69 kW	B
		16'	2	TLC-BT-575	1.15 kW	B
F3-F4	90'	90'	9	TLC-LED-1500	12.69 kW	B
		90'	2	TLC-LED-550	1.08 kW	C
		16'	2	TLC-BT-575	1.15 kW	B
S1	70'	70'	2	TLC-LED-900	1.76 kW	A
S2	70'	70'	1	TLC-LED-1200	1.17 kW	A
		70'	2	TLC-LED-900	1.76 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
S3	70'	70'	1	TLC-LED-1200	1.17 kW	A
		70'	1	TLC-LED-550	0.54 kW	A
		70'	1	TLC-LED-900	0.88 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
S4-S5	60'	60'	2	TLC-LED-900	1.76 kW	A
S6	70'	70'	1	TLC-LED-900	0.88 kW	A
		70'	1	TLC-LED-550	0.54 kW	A
		70'	1	TLC-LED-1200	1.17 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
S7	70'	70'	2	TLC-LED-900	1.76 kW	A
		70'	1	TLC-LED-1200	1.17 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
S8	70'	70'	2	TLC-LED-900	1.76 kW	A
24			**140**		**147.07 kW**	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	West Football/Soccer	22.68 kW	28
B	Football East	55.36 kW	44
C	FB East Egress	2.16 kW	4
D	Baseball	45.91 kW	44
E	Softball	20.96 kW	20

Fixture Type Summary

Type	Circuit	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-BT-575	A	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8
TLC-BT-575	B	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8
TLC-BT-575	D	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	10
TLC-BT-575	E	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	4
TLC-LED-1200	A	LED 5700K - 75 CRI	1170W	150,000	>120,000	>120,000	>120,000	4
TLC-LED-1200	D	LED 5700K - 75 CRI	1170W	150,000	>120,000	>120,000	>120,000	17
TLC-LED-1200	E	LED 5700K - 75 CRI	1170W	150,000	>120,000	>120,000	>120,000	3
TLC-LED-1500	B	LED 5700K - 75 CRI	1410W	181,000	>120,000	>120,000	>120,000	36
TLC-LED-1500	D	LED 5700K - 75 CRI	1410W	181,000	>120,000	>120,000	>120,000	10

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



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Mira Costa High School North Field

Manhattan Beach, CA

Fixture Type Summary

Type	Circuit	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1500	E	LED 5700K - 75 CRI	1410W	181,000	>120,000	>120,000	>120,000	7
TLC-LED-550	A	LED 5700K - 75 CRI	540W	67,000	>120,000	>120,000	>120,000	2
TLC-LED-550	C	LED 5700K - 75 CRI	540W	67,000	>120,000	>120,000	>120,000	4
TLC-LED-900	A	LED 5700K - 75 CRI	880W	104,000	>120,000	>120,000	>120,000	14
TLC-LED-900	D	LED 5700K - 75 CRI	880W	104,000	>120,000	>120,000	>120,000	6
TLC-LED-900	D	LED 5700K - 75 CRI	890W	89,600	>120,000	>120,000	>120,000	1
TLC-LED-900	E	LED 5700K - 75 CRI	880W	104,000	>120,000	>120,000	>120,000	6

Single Fixture Amperage Draw Chart

Driver Specifications (.90 min power factor)	Line Amperage Per Fixture (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1500	8.4	7.9	7.3	6.3	5.0	4.6	3.6
TLC-LED-1200	6.9	6.5	6.0	5.2	4.2	3.8	3.0
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9	2.3
TLC-BT-575	3.3	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-550	3.2	3.0	2.8	2.4	1.9	1.8	1.4

Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination Ave					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Bleachers (Egress)	Horizontal Illuminance	8.1	2.5	11.6	4.69	3.27	C	4
East Football	Horizontal Illuminance	55.5	47.9	59.8	1.25	1.16	B	44
East Project Spill @ 3ft.	Horizontal Illuminance	0.006	0.000	0.073	-	-	A,B,C,D,E	140
East Project Spill @ 5ft.	Max Candela Metric	572.198	9.068	4579.312	504.997	63.101	A,B,C,D,E	140
East Project Spill @ 5ft.	Max Vertical Illuminance Metric	0.014	0.000	0.158	-	-	A,B,C,D,E	140
East Soccer	Horizontal Illuminance	54.6	46.1	60.2	1.31	1.19	B,C	48
Egress	Horizontal Illuminance	0.0	0.0	0.0	-	0.00	C	4
Farthest North Project Spill @ 3ft.(1)	Horizontal Illuminance	0.025	0.000	0.824	-	-	A,B,C,D,E	140
Farthest North Project Spill @ 5ft.(1)	Max Candela Metric	338.660	3.830	2477.435	646.794	88.415	A,B,C,D,E	140
Farthest North Project Spill @ 5ft.(1)	Max Vertical Illuminance Metric	0.031	0.000	0.863	-	-	A,B,C,D,E	140
North House Spill @ 10' AFG	Horizontal	0.0	0.0	0.1	54.93	17.20	A,B,C,D,E	140
North House Spill @ 10' AFG	Max Candela (by Light Bank)	954.7	226.7	2099.9	9.26	4.21	A,B,C,D,E	140
North House Spill @ 10' AFG	Max Vertical Illuminance Metric	0.1	0.0	0.2	26.36	9.32	A,B,C,D,E	140
North House Spill @ 15' AFG	Horizontal	0.0	0.0	0.1	51.67	14.36	A,B,C,D,E	140
North House Spill @ 15' AFG	Max Candela (by Light Bank)	665.0	183.7	1432.3	7.80	3.62	A,B,C,D,E	140
North House Spill @ 15' AFG	Max Vertical Illuminance Metric	0.0	0.0	0.1	24.67	7.82	A,B,C,D,E	140
Track	Horizontal Illuminance	23.2	1.9	45.2	24.32	12.48	B,C	48
West Football	Horizontal Illuminance	21.3	11.6	27.4	2.37	1.84	A	28
West Project Spill @ -8ft.(1)	Max Candela Metric	2434.532	5.637	4858.107	861.818	431.881	A,B,C,D,E	140
West Project Spill @ -8ft.(1)	Max Vertical Illuminance Metric	0.175	0.000	0.501	-	-	A,B,C,D,E	140
West Property Line Spill	Horizontal	0.3	0.0	2.6	-	-	A,B,C,D,E	140
West Property Line Spill	Max Candela (by Fixture)	3365.7	33.1	14683.4	443.16	101.58	A,B,C,D,E	140
West Property Line Spill	Max Vertical Illuminance Metric	0.4	0.0	2.7	15649.60	2276.72	A,B,C,D,E	140
West Soccer	Horizontal Illuminance	21.6	10.7	26.8	2.50	2.01	A	28

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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Mira Costa High School North Field

Manhattan Beach, CA

Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	70'	TLC-LED-1200	1	1	0
				70' 15.5'	TLC-LED-900 TLC-BT-575	2 2	2 2	0 0
2	S3 S6	70'	-	70'	TLC-LED-1200	1	1	0
				70' 70' 15.5'	TLC-LED-550 TLC-LED-900 TLC-BT-575	1 1 2	1 1 2	0 0 0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
8	Totals					28	28	0

Above Field Level is height of fixtures above area shown



Grid Summary

Name:	**West Soccer**
Size:	360' x 210'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES	Entire Grid
Scan Average:	**21.6**
Maximum:	26.8
Minimum:	10.7
Avg/Min:	2.01
Max/Min:	**2.50**
UG (adjacent pts):	1.46
CU:	0.64
No. of Points:	84
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**28**
Total Load:	22.68 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Mira Costa High School North Field

Manhattan Beach, CA

Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-900	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
8	Totals					28	28	0

Above Field Level is height of fixtures above area shown



Grid Summary

Name:	**West Football**
Size:	360' x 160'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES	
	Entire Grid
Scan Average:	**21.3**
Maximum:	27.4
Minimum:	11.6
Avg/Min:	1.84
Max/Min:	**2.37**
UG (adjacent pts):	1.50
CU:	0.54
No. of Points:	72
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**28**
Total Load:	22.68 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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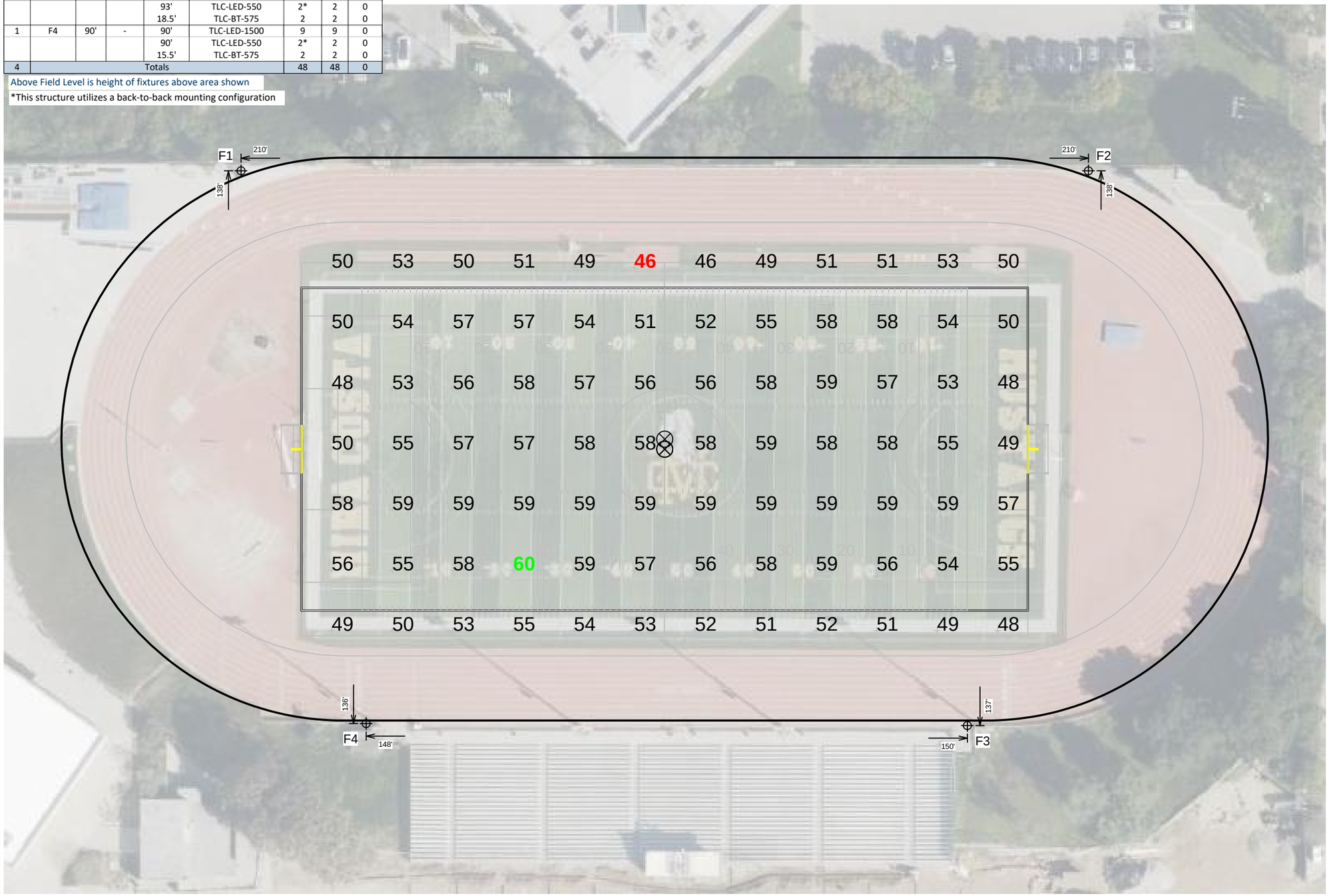
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	100'	-	100'	TLC-LED-1500	9	9	0
				15.5'	TLC-BT-575	2	2	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	48	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 50

0' 50' 100'

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Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**East Soccer**
Size:	360' x 185'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES	Entire Grid
Guaranteed Average:	**50**
Scan Average:	54.6
Maximum:	60.2
Minimum:	46.1
Avg/Min:	1.19
Guaranteed Max/Min:	**2**
Max/Min:	1.31
UG (adjacent pts):	1.17
CU:	0.57
No. of Points:	84
FIXTURE INFORMATION	
Applied Circuits:	B,C
No. of Fixtures:	**48**
Total Load:	57.52 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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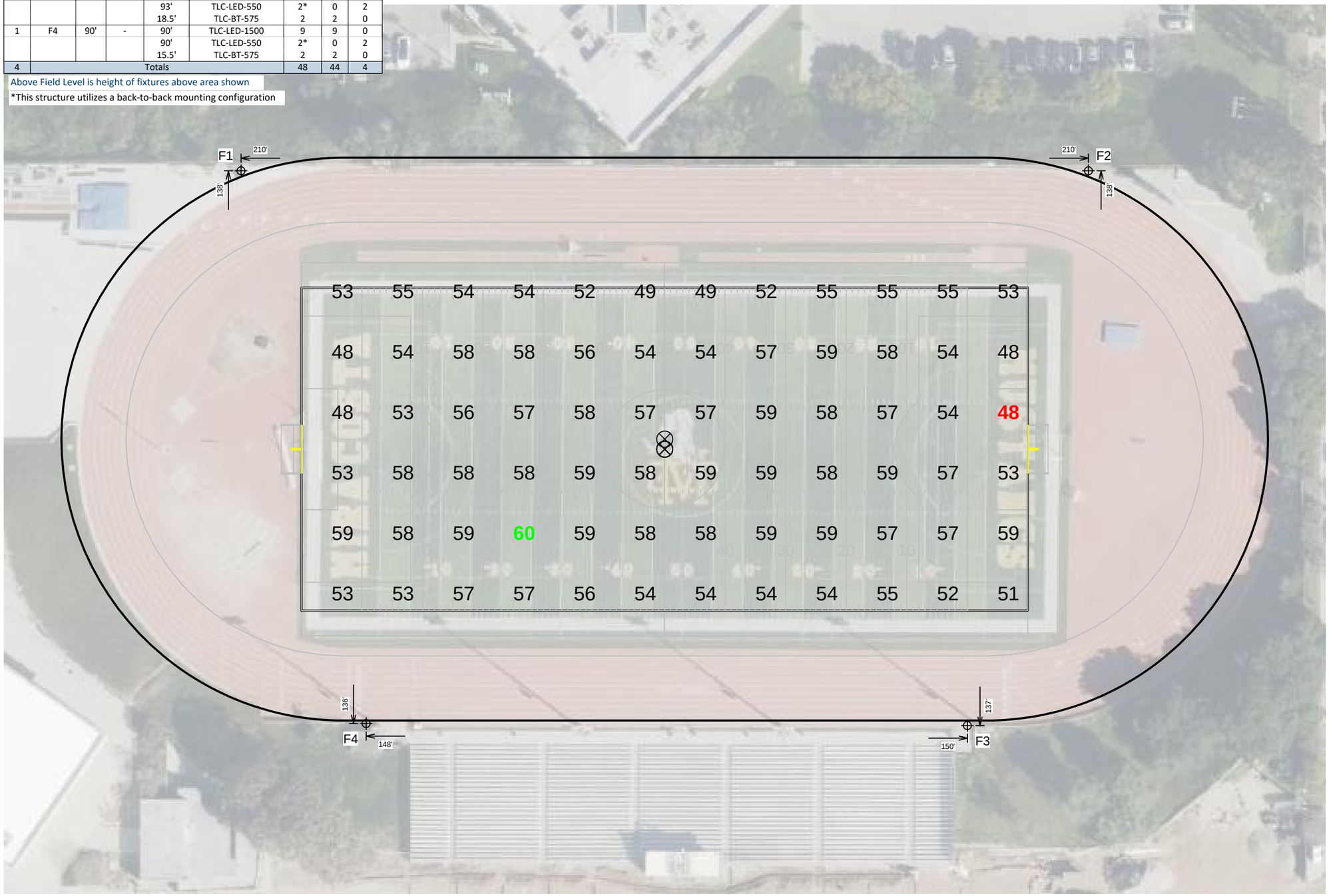
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	100'	-	100'	TLC-LED-1500	9	9	0
				15.5'	TLC-BT-575	2	2	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	0	2
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	0	2
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	44	4

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 50

0' 50' 100'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**East Football**
Size:	360' x 160'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Guaranteed Average:	**50**
Scan Average:	55.5
Maximum:	59.8
Minimum:	47.9
Avg/Min:	1.16
Guaranteed Max/Min:	**2**
Max/Min:	1.25
UG (adjacent pts):	1.14
CU:	0.51
No. of Points:	72
FIXTURE INFORMATION	
Applied Circuits:	B
No. of Fixtures:	**44**
Total Load:	55.36 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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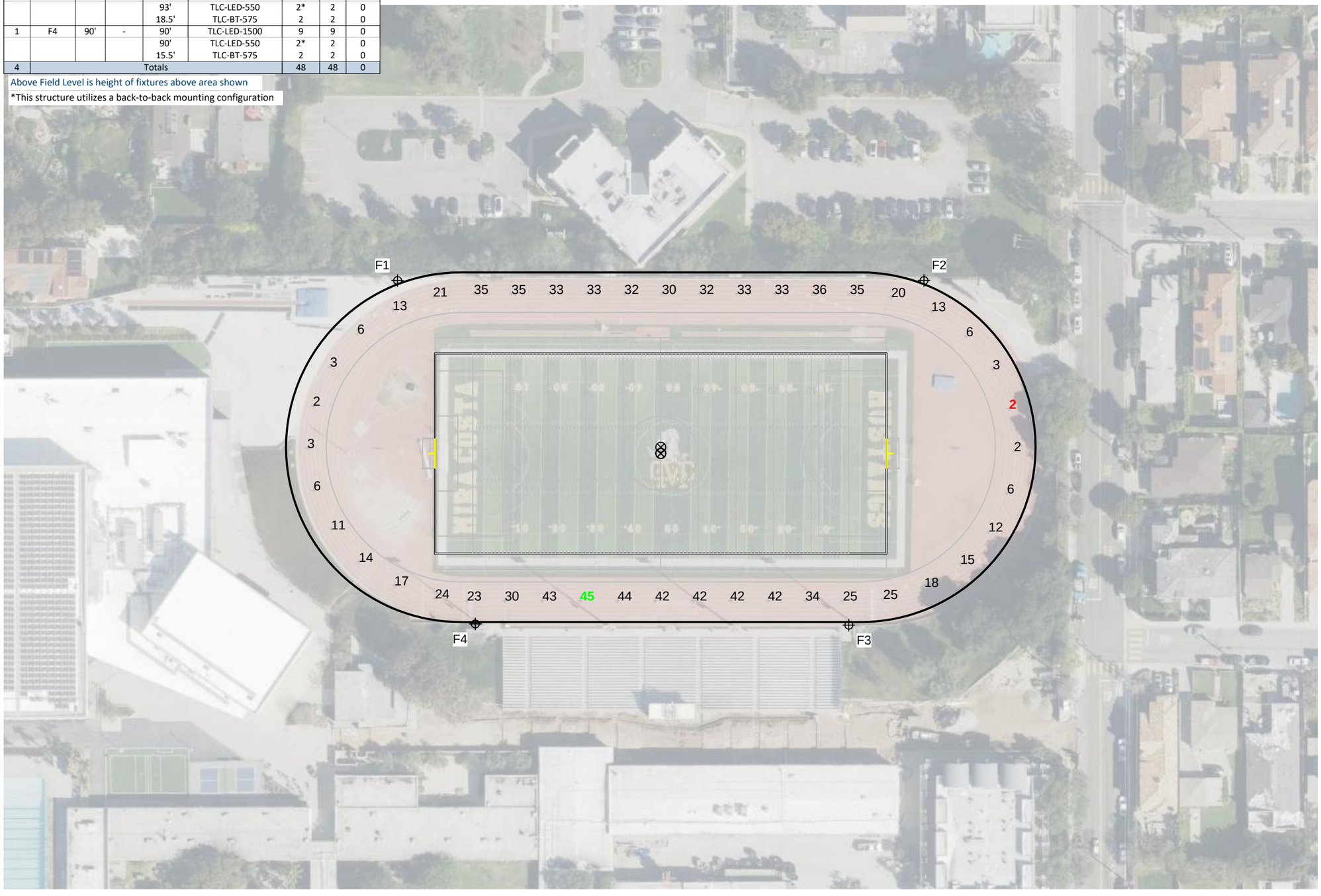
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	100'	-	100'	TLC-LED-1500	9	9	0
				15.5'	TLC-BT-575	2	2	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
4	Totals					48	48	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**Track**
Size:	Irregular
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average:	**23.2**
Maximum:	45.2
Minimum:	1.9
Avg/Min:	12.48
Max/Min:	**24.32**
UG (adjacent pts):	0.00
CU:	0.13
No. of Points:	44
FIXTURE INFORMATION	
Applied Circuits:	B,C
No. of Fixtures:	**48**
Total Load:	57.52 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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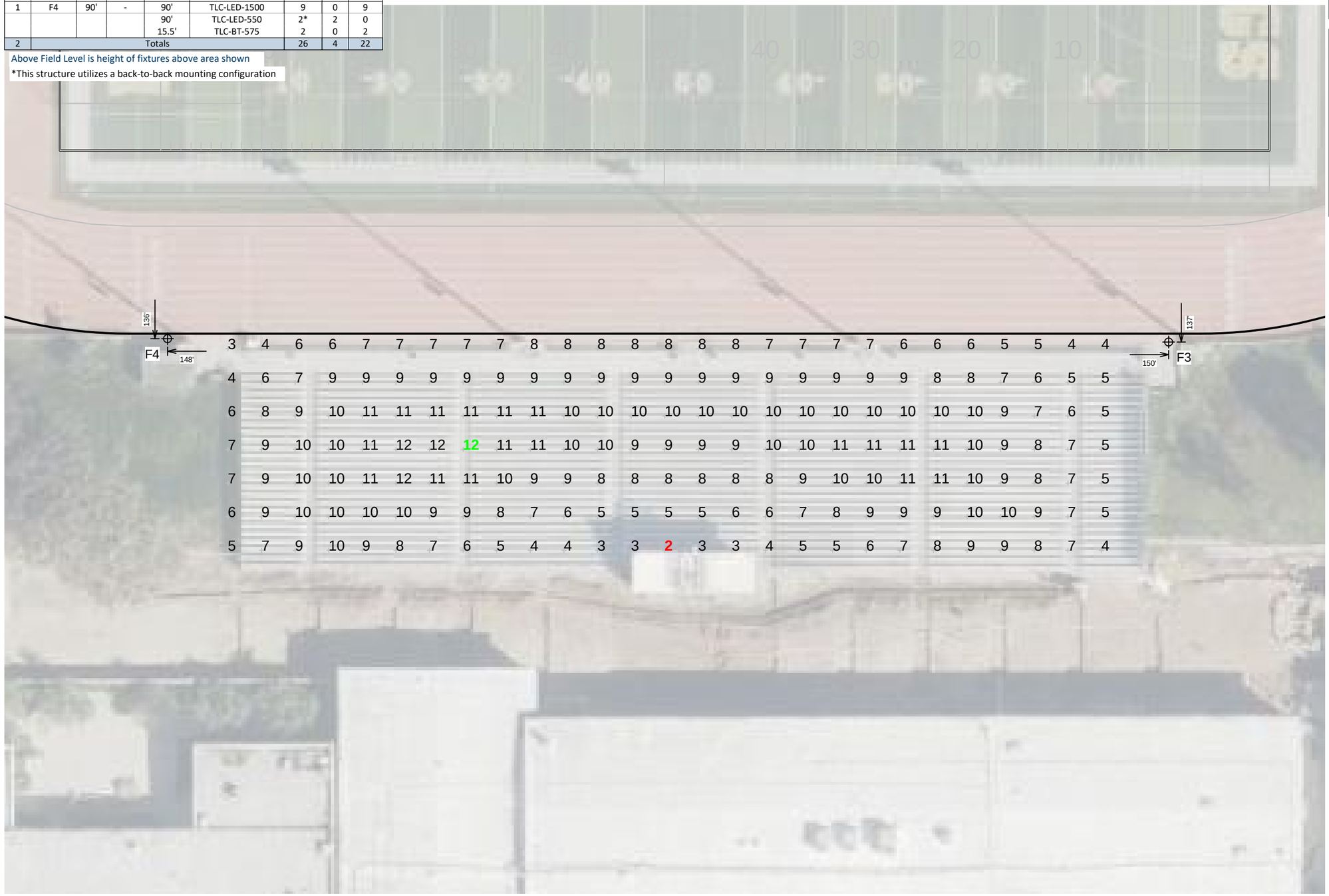
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
1	F3	90'	3'	93'	TLC-LED-1500	9	0	9
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	0	2
1	F4	90'	-	90'	TLC-LED-1500	9	0	9
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	0	2
2	Totals					26	4	22

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**Bleachers (Egress)**
Size:	0' x 0'
Spacing:	10.0' x 10.0'
Height:	22.6' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES	Entire Grid
Scan Average:	**8.1**
Maximum:	11.6
Minimum:	2.5
Avg/Min:	3.27
Max/Min:	**4.69**
UG (adjacent pts):	0.00
CU:	0.57
No. of Points:	189
FIXTURE INFORMATION	
Applied Circuits:	C
No. of Fixtures:	**4**
Total Load:	2.16 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 30

0' 30' 60'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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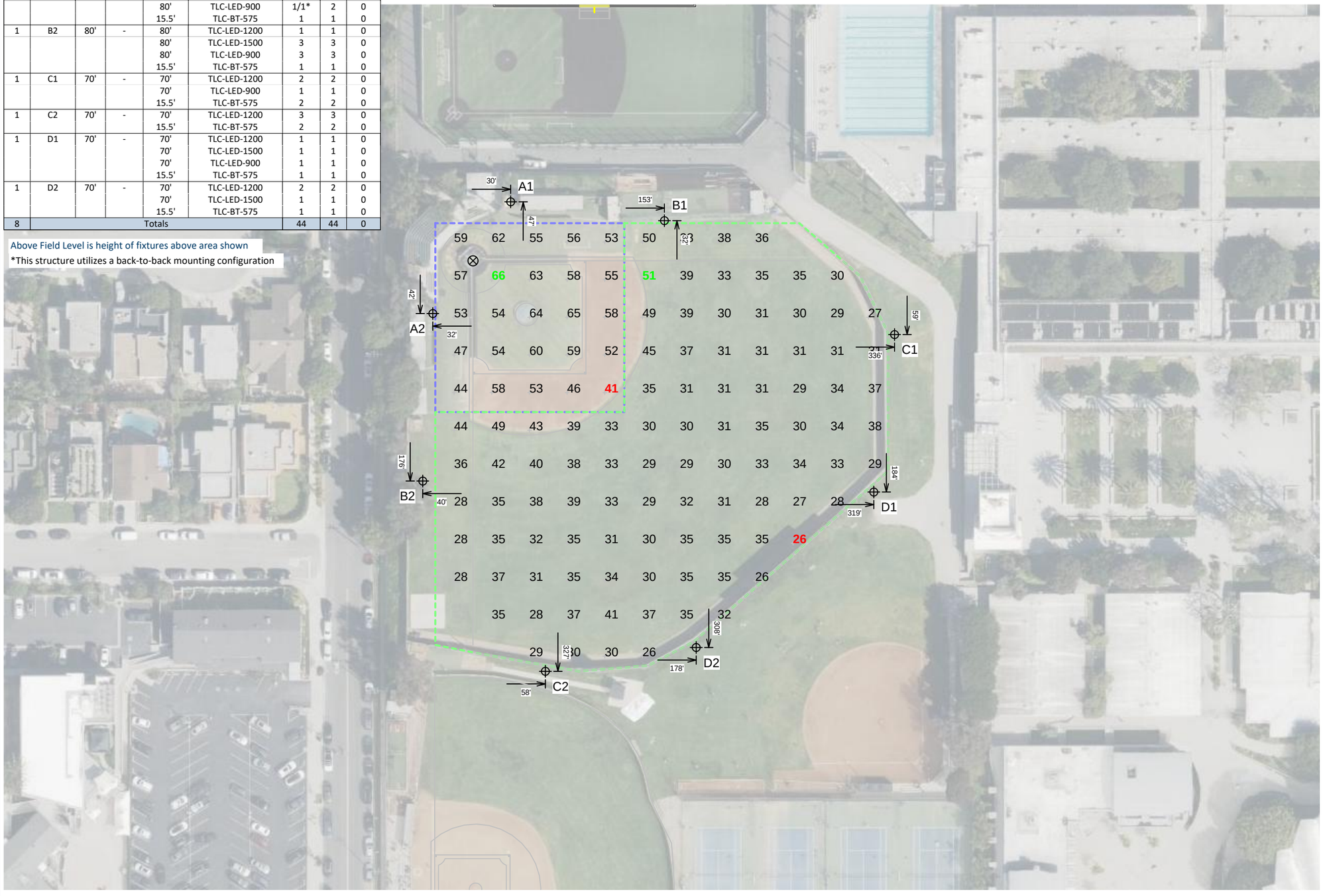
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	-	70'	TLC-LED-1200	4	4	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	-	80'	TLC-LED-1500	5	5	0
				80'	TLC-LED-900	1/1*	2	0
				15.5'	TLC-BT-575	1	1	0
1	B2	80'	-	80'	TLC-LED-1200	1	1	0
				80'	TLC-LED-1500	3	3	0
				80'	TLC-LED-900	3	3	0
				15.5'	TLC-BT-575	1	1	0
1	C1	70'	-	70'	TLC-LED-1200	2	2	0
				70'	TLC-LED-900	1	1	0
				15.5'	TLC-BT-575	2	2	0
1	C2	70'	-	70'	TLC-LED-1200	3	3	0
				15.5'	TLC-BT-575	2	2	0
1	D1	70'	-	70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	1	1	0
				70'	TLC-LED-900	1	1	0
				15.5'	TLC-BT-575	1	1	0
1	D2	70'	-	70'	TLC-LED-1200	2	2	0
				70'	TLC-LED-1500	1	1	0
				15.5'	TLC-BT-575	1	1	0
8	Totals					44	44	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**Baseball**
Size:	Irregular 260'/345'/306'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES	
	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	55.7	33.9
Maximum:	66.1	50.6
Minimum:	40.5	25.5
Avg/Min:	1.37	1.33
Guaranteed Max/Min:	**2**	**2.5**
Max/Min:	1.63	1.98
UG (adjacent pts):	1.33	1.40
CU:	0.74	
No. of Points:	25	96
FIXTURE INFORMATION		
Applied Circuits:	D	
No. of Fixtures:	**44**	
Total Load:	45.91 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 80

0' 80' 160'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B3	70'	-	70'	TLC-LED-1500	3	3	0
				70'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B4	70'	-	70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
				15.5'	TLC-BT-575	1	1	0
4	Totals					20	20	0

Above Field Level is height of fixtures above area shown



Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**Softball**
Size:	Irregular 202'/217'/193'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES	
	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	53.2	37.7
Maximum:	67.8	51.8
Minimum:	40.5	24.3
Avg/Min:	1.31	1.55
Guaranteed Max/Min:	**2**	**2.5**
Max/Min:	1.67	2.13
UG (adjacent pts):	1.39	1.45
CU:	0.66	
No. of Points:	25	76
FIXTURE INFORMATION		
Applied Circuits:	E	
No. of Fixtures:	**20**	
Total Load:	20.96 kW	

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 60

0' 60' 120'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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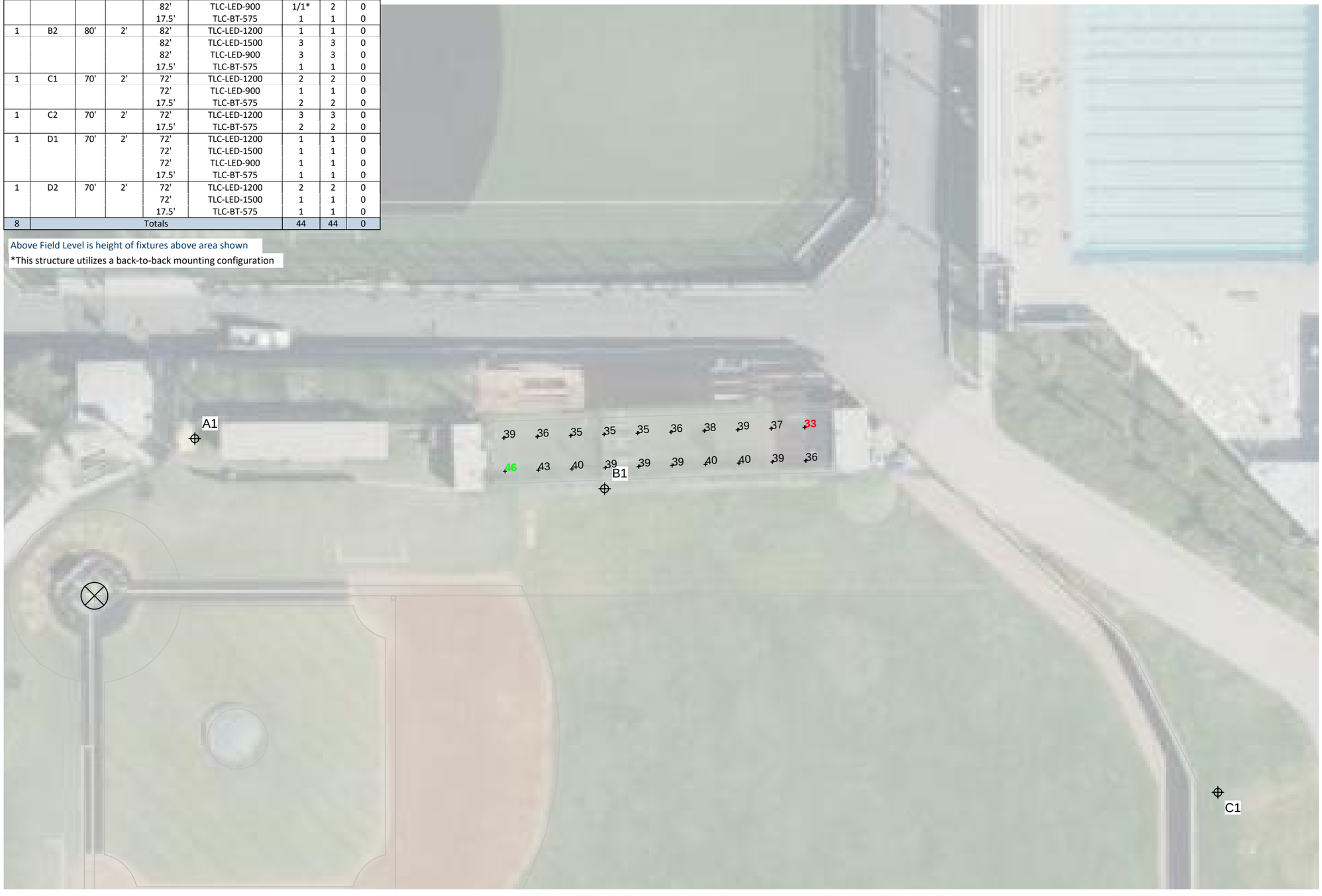
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	82'	TLC-LED-1200	1	1	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-900	3	3	0
				17.5'	TLC-BT-575	1	1	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-1500	1	1	0
				17.5'	TLC-BT-575	1	1	0
8	Totals					44	44	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 30

0' 30' 60'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**BB Bull Pen**
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average:	**38.2**
Maximum:	46.0
Minimum:	33.4
Avg/Min:	1.14
Max/Min:	**1.38**
UG (adjacent pts):	1.19
CU:	0.01
No. of Points:	20
FIXTURE INFORMATION	
Applied Circuits:	D
No. of Fixtures:	**44**
Total Load:	45.91 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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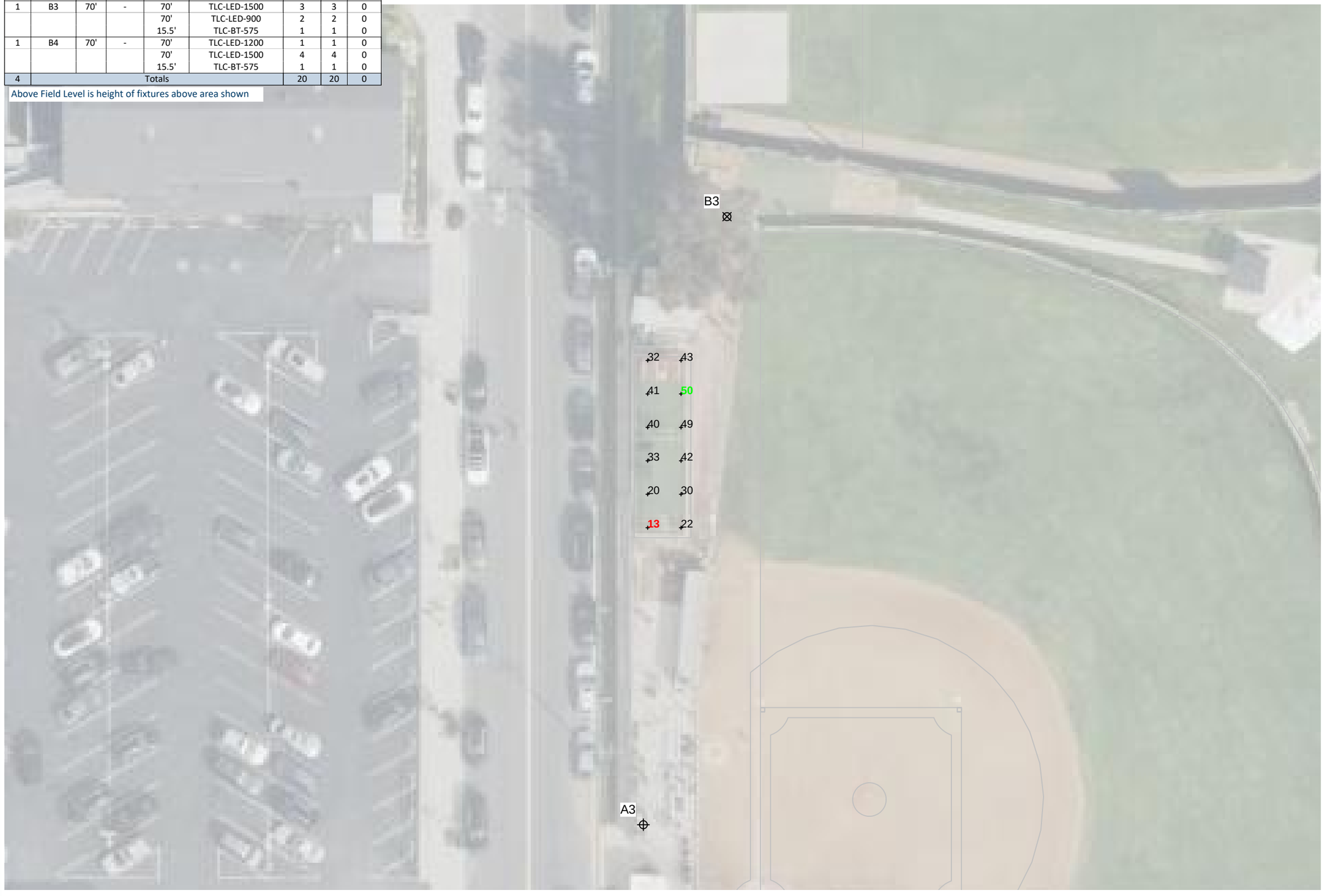
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B3	70'	-	70'	TLC-LED-1500	3	3	0
				70'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B4	70'	-	70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
				15.5'	TLC-BT-575	1	1	0
4	Totals					20	20	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 30

0' 30' 60'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**SB Bull Pen**
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES	
	Entire Grid
Scan Average:	**34.5**
Maximum:	49.8
Minimum:	12.7
Avg/Min:	2.71
Max/Min:	**3.91**
UG (adjacent pts):	1.76
CU:	0.02
No. of Points:	12
FIXTURE INFORMATION	
Applied Circuits:	E
No. of Fixtures:	**20**
Total Load:	20.96 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**West Property Line Spill**
Spacing:	30.0' x 10.0'
Height:	-10.0' above grade

Illumination Summary

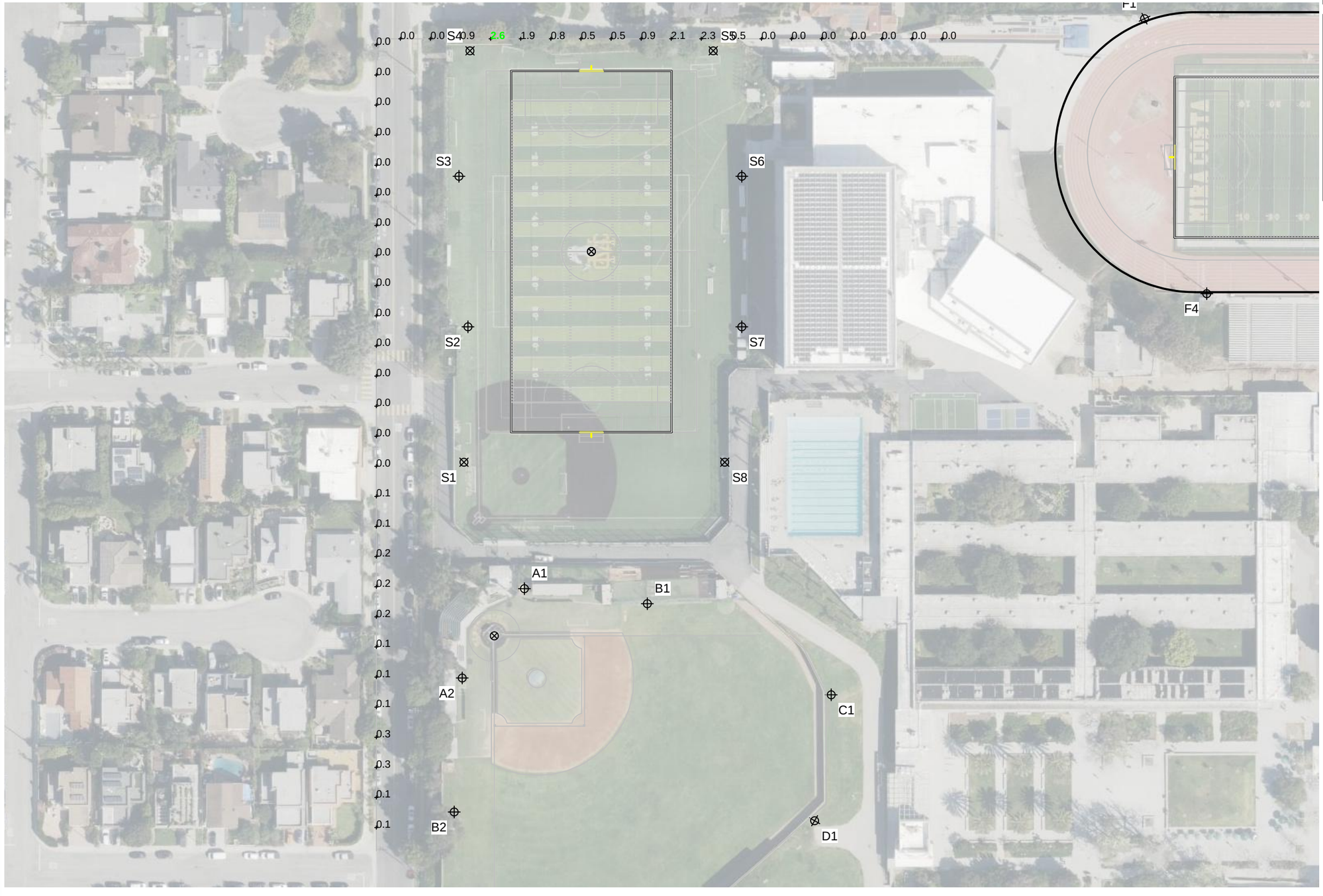
	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.3**
Maximum:	2.6
Minimum:	0.0
Avg/Min:	-
Max/Min:	**-**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	46
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



SCALE IN FEET 1 : 100

0' 100' 200'

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Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Mira Costa High School North Field

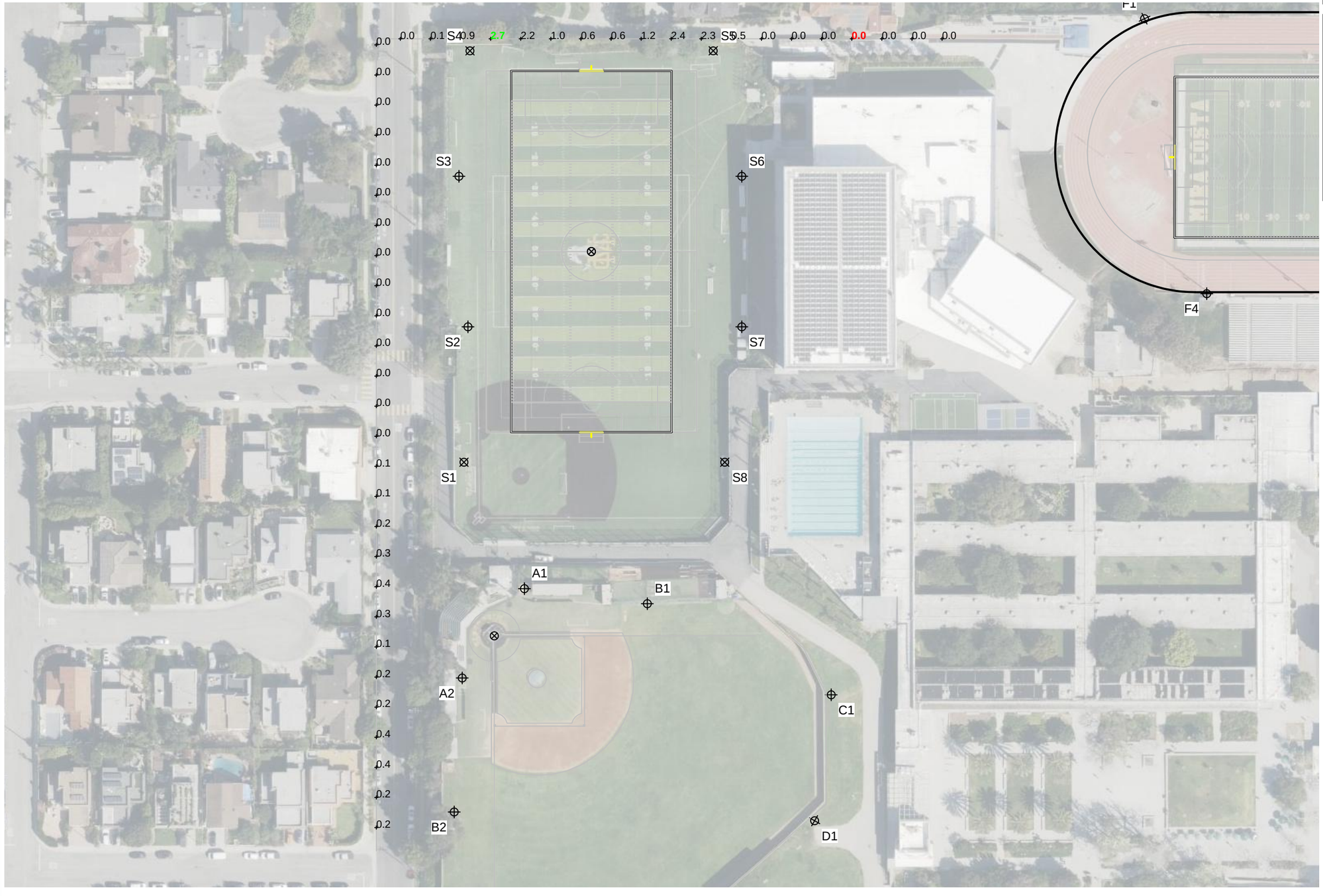
Manhattan Beach, CA

Grid Summary

Name:	**West Property Line Spill**
Spacing:	30.0' x 10.0'
Height:	-10.0' above grade

Illumination Summary

	MAINTAINED MAX VERTICAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.4**
Maximum:	2.7
Minimum:	0.0
Avg/Min:	2276.72
Max/Min:	**15649.60**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	46
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW



Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Mira Costa High School North Field

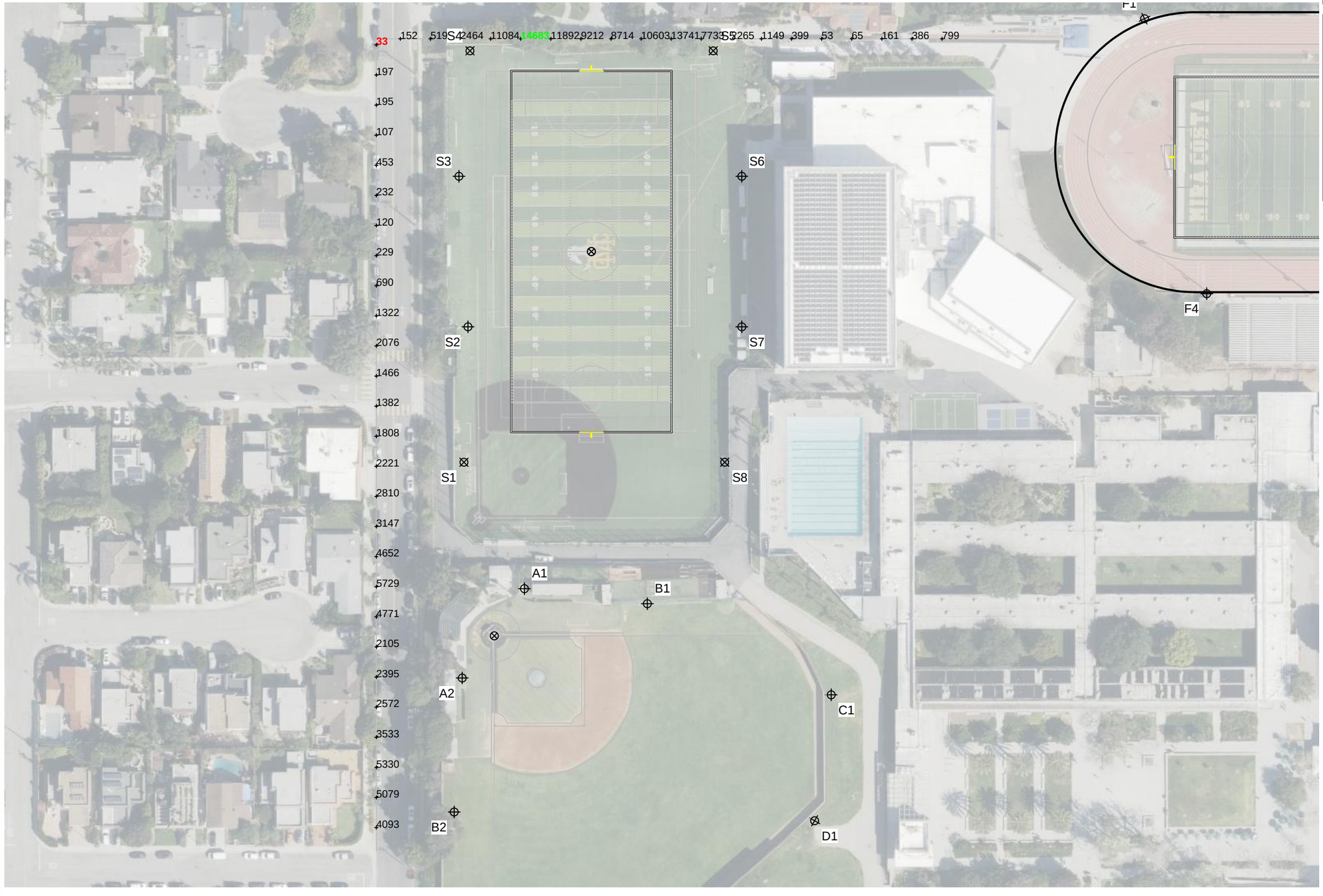
Manhattan Beach, CA

Grid Summary

Name:	**West Property Line Spill**
Spacing:	30.0' x 10.0'
Height:	-10.0' above grade

Illumination Summary

	MAINTAINED MAX CANDELA (PER FIXTURE)
	Entire Grid
Scan Average:	**3365.7**
Maximum:	14683.4
Minimum:	33.1
Avg/Min:	101.58
Max/Min:	**443.16**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	46
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW



Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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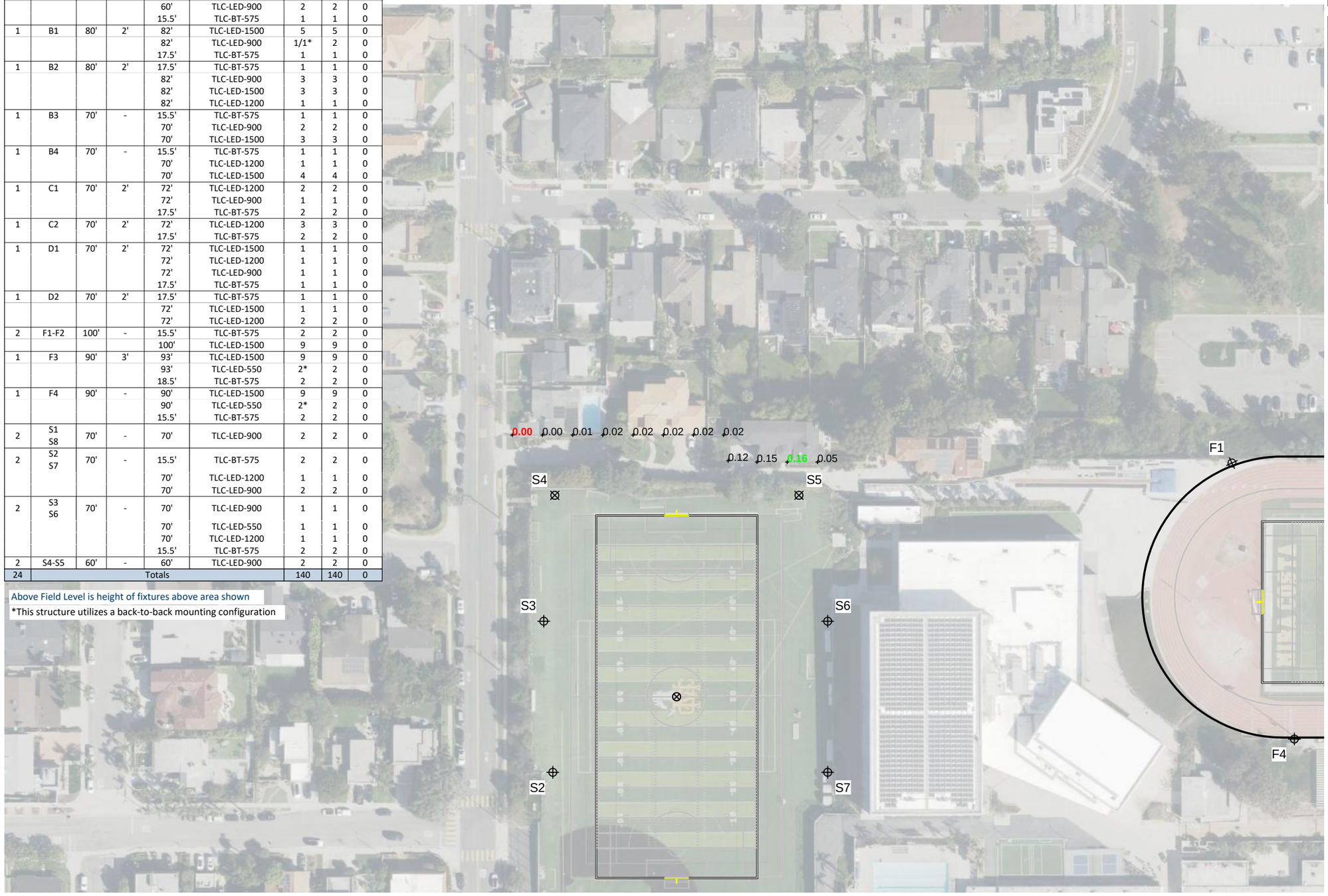
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	17.5'	TLC-BT-575	1	1	0
				82'	TLC-LED-900	3	3	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-1200	1	1	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	2	2	0
				70'	TLC-LED-1500	3	3	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	17.5'	TLC-BT-575	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	2	2	0
2	F1-F2	100'	-	15.5'	TLC-BT-575	2	2	0
				100'	TLC-LED-1500	9	9	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
24	Totals					140	140	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

ENGINEERED DESIGN By: EFox • File #186768F • 03-Nov-25

Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**North House Spill @ 5' AFG**
Spacing:	30.0' x 10.0'
Height:	-5.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.1**
Maximum:	0.2
Minimum:	0.0
Avg/Min:	19.66
Max/Min:	**61.50**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	12
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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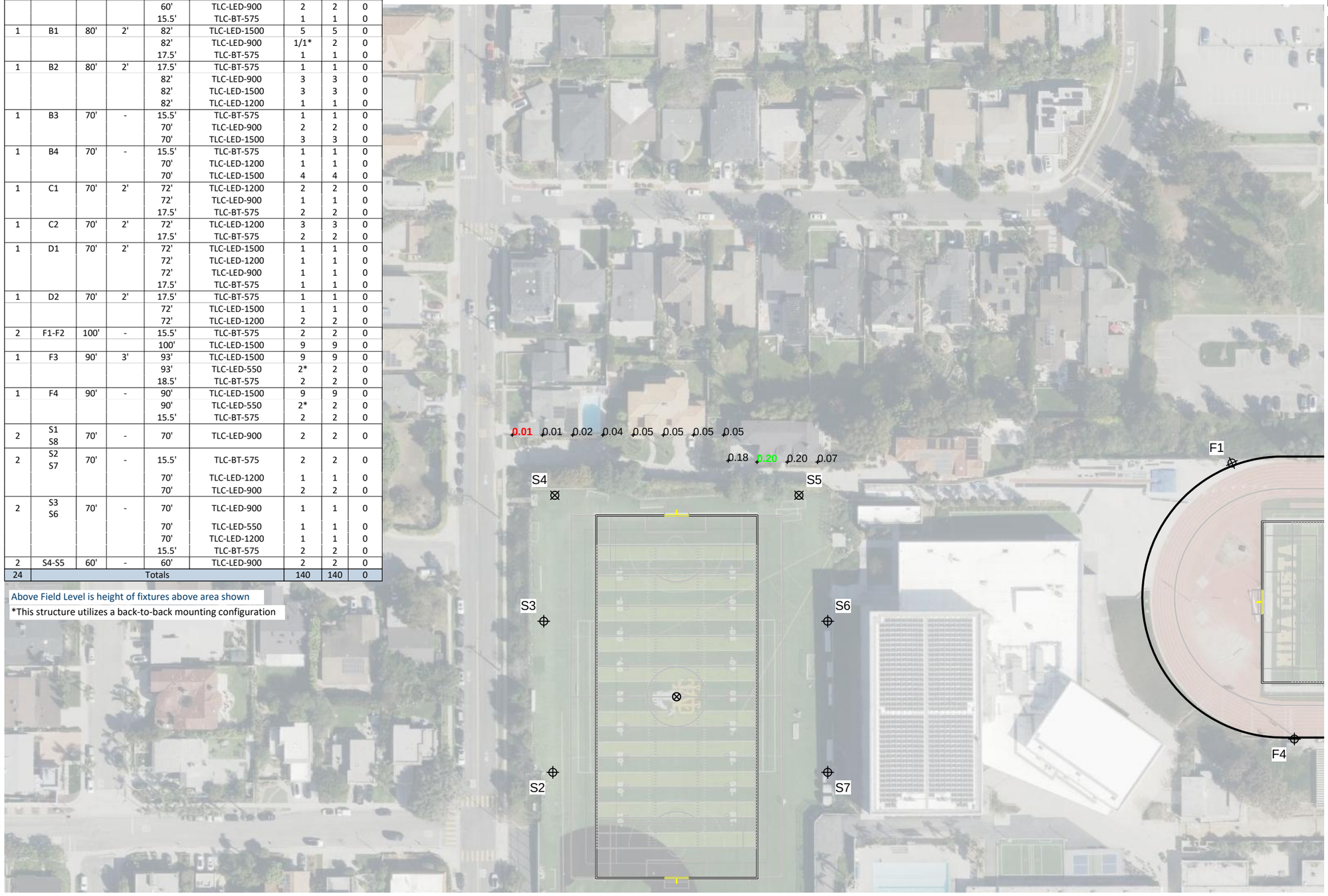
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	17.5'	TLC-BT-575	1	1	0
				82'	TLC-LED-900	3	3	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-1200	1	1	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	2	2	0
				70'	TLC-LED-1500	3	3	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	17.5'	TLC-BT-575	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	2	2	0
2	F1-F2	100'	-	15.5'	TLC-BT-575	2	2	0
				100'	TLC-LED-1500	9	9	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
24	Totals					140	140	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

ENGINEERED DESIGN By: EFox • File #186768F • 03-Nov-25

Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**North House Spill @ 5' AFG**
Spacing:	30.0' x 10.0'
Height:	-5.0' above grade

Illumination Summary

	MAINTAINED MAX VERTICAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.1**
Maximum:	0.2
Minimum:	0.0
Avg/Min:	10.93
Max/Min:	**28.54**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	12
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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Mira Costa High School North Field

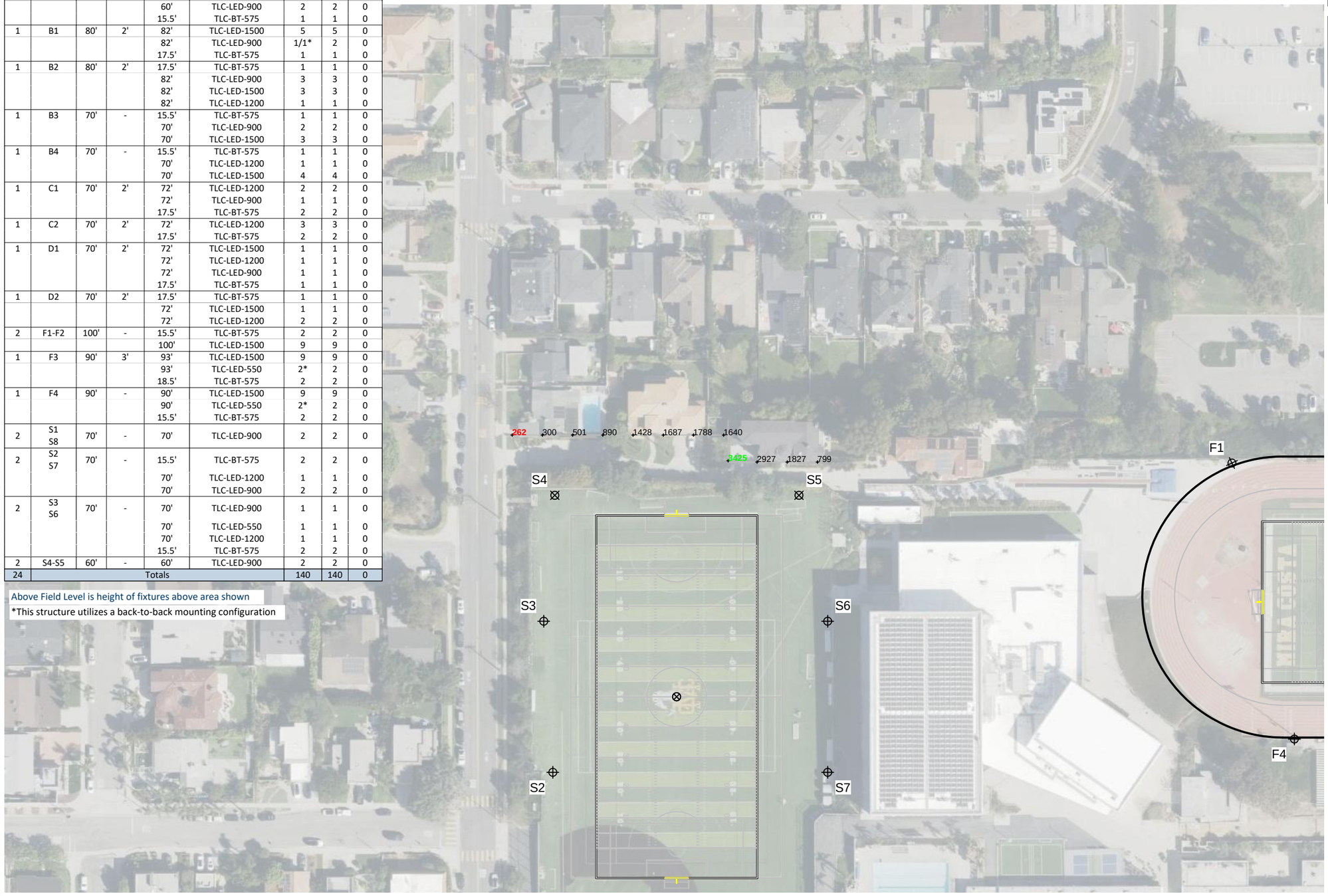
Manhattan Beach, CA

Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	17.5'	TLC-BT-575	1	1	0
				82'	TLC-LED-900	3	3	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-1200	1	1	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	2	2	0
				70'	TLC-LED-1500	3	3	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	17.5'	TLC-BT-575	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	2	2	0
2	F1-F2	100'	-	15.5'	TLC-BT-575	2	2	0
				100'	TLC-LED-1500	9	9	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
24	Totals					140	140	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

SCALE IN FEET 1 : 100

0' 100' 200'

ENGINEERED DESIGN By: EFox • File #186768F • 03-Nov-25

Grid Summary

Name:	**North House Spill @ 5' AFG**
Spacing:	30.0' x 10.0'
Height:	-5.0' above grade

Illumination Summary

	MAINTAINED MAX CANDELA (PER LIGHTBANK)
	Entire Grid
Scan Average:	**1456.2**
Maximum:	3425.2
Minimum:	262.4
Avg/Min:	5.55
Max/Min:	**13.05**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	12
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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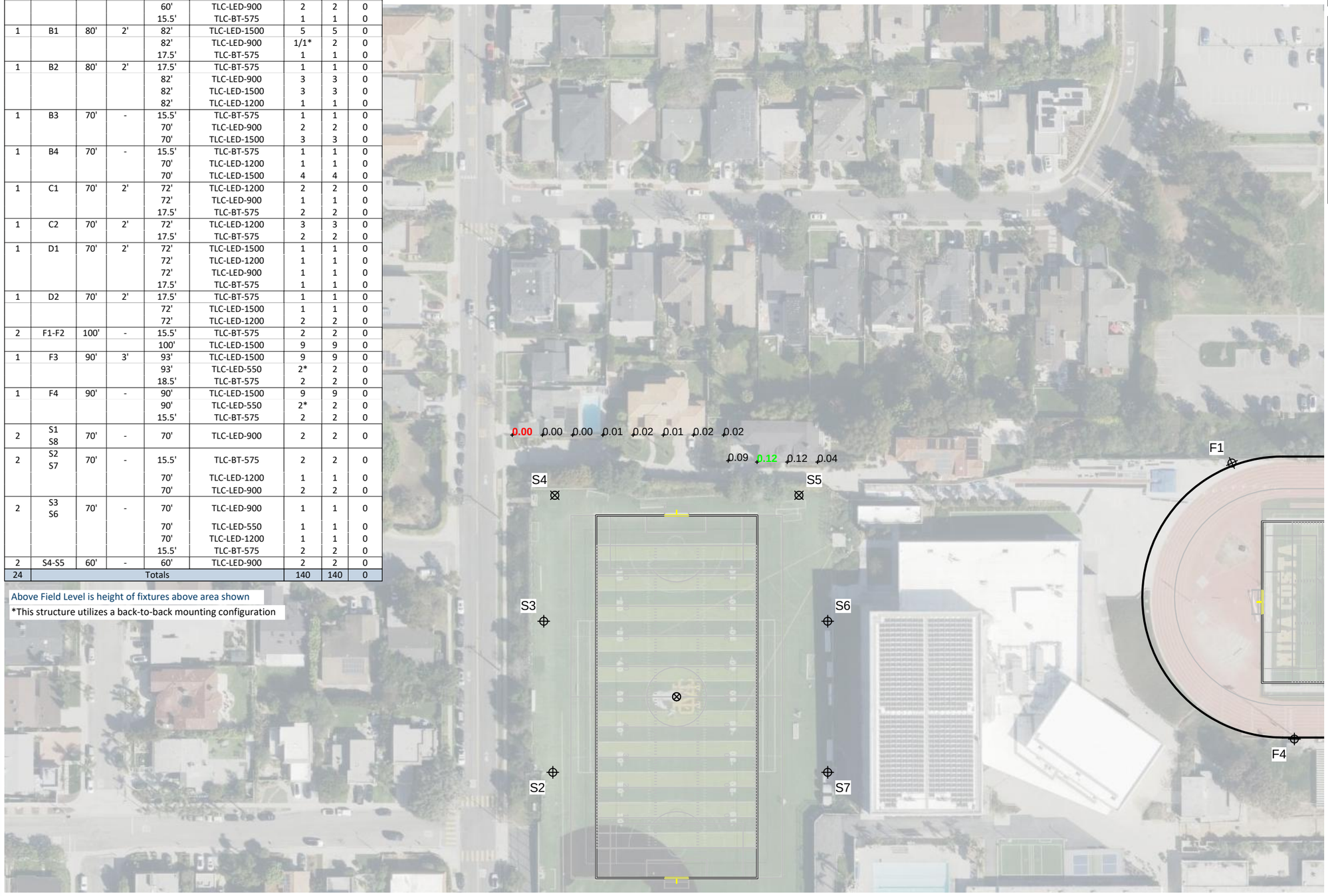
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	17.5'	TLC-BT-575	1	1	0
				82'	TLC-LED-900	3	3	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-1200	1	1	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	2	2	0
				70'	TLC-LED-1500	3	3	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	17.5'	TLC-BT-575	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	2	2	0
2	F1-F2	100'	-	15.5'	TLC-BT-575	2	2	0
				100'	TLC-LED-1500	9	9	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
24	Totals					140	140	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

ENGINEERED DESIGN By: EFox • File #186768F • 03-Nov-25

Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**North House Spill @ 10' AFG**
Spacing:	30.0' x 10.0'
Height:	0.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.0**
Maximum:	0.1
Minimum:	0.0
Avg/Min:	17.20
Max/Min:	**54.93**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	12
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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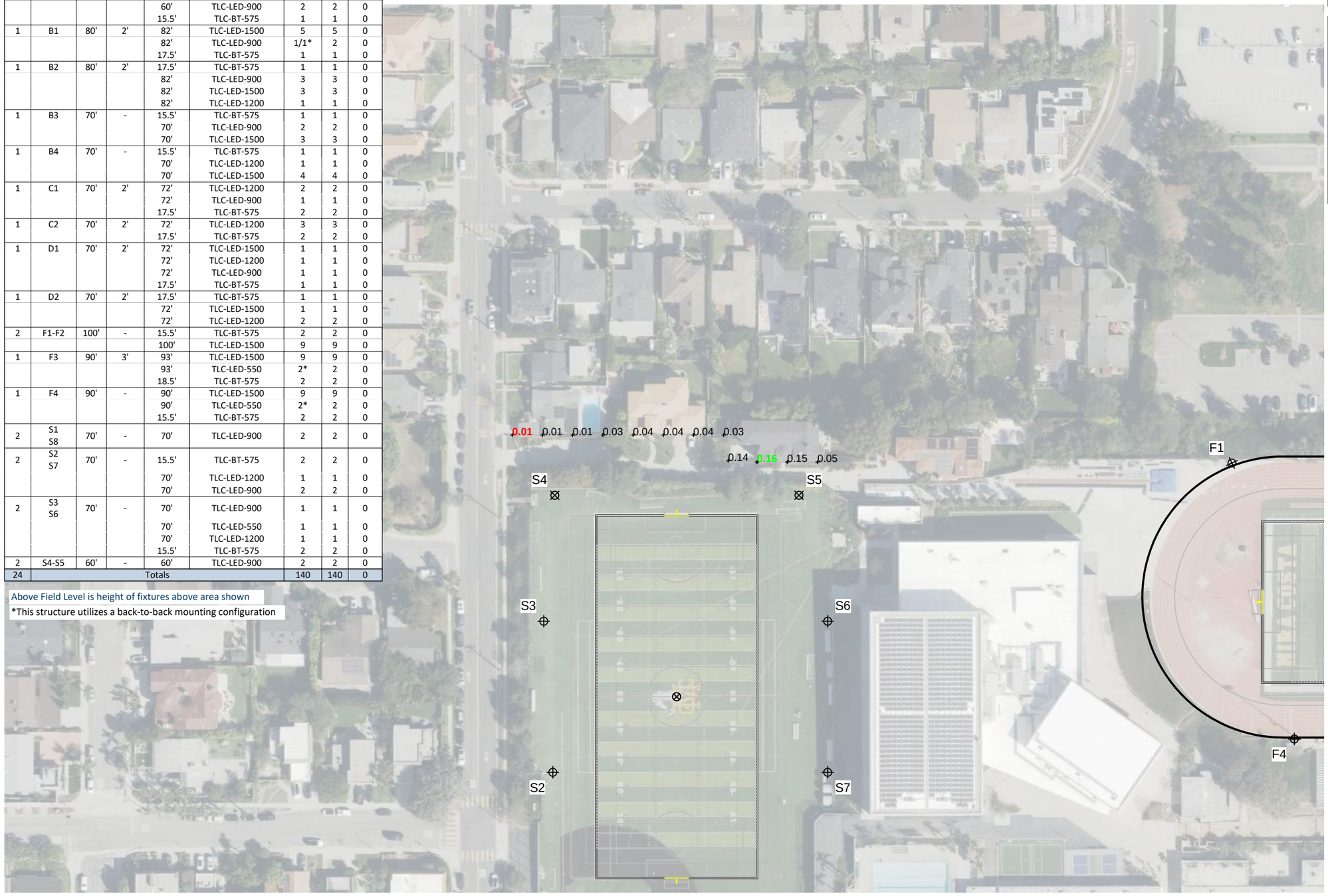
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	17.5'	TLC-BT-575	1	1	0
				82'	TLC-LED-900	3	3	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-1200	1	1	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	2	2	0
				70'	TLC-LED-1500	3	3	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	17.5'	TLC-BT-575	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	2	2	0
2	F1-F2	100'	-	15.5'	TLC-BT-575	2	2	0
				100'	TLC-LED-1500	9	9	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
24	Totals					140	140	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

ENGINEERED DESIGN By: EFox • File #186768F • 03-Nov-25

Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**North House Spill @ 10' AFG**
Spacing:	30.0' x 10.0'
Height:	0.0' above grade

Illumination Summary

MAINTAINED MAX VERTICAL FOOTCANDLES	
	Entire Grid
Scan Average:	**0.1**
Maximum:	0.2
Minimum:	0.0
Avg/Min:	9.32
Max/Min:	**26.36**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	12
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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Mira Costa High School North Field

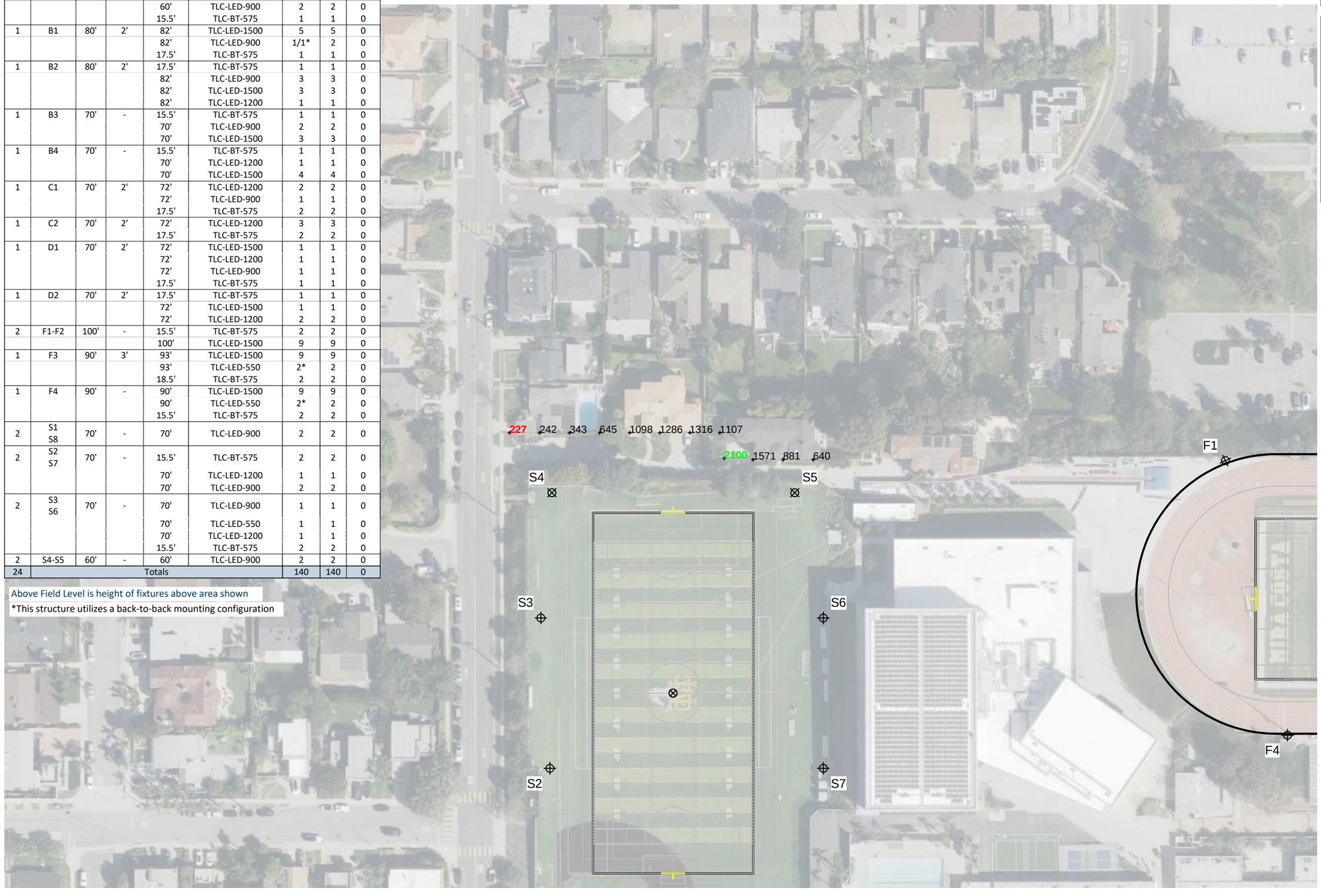
Manhattan Beach, CA

Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	17.5'	TLC-BT-575	1	1	0
				82'	TLC-LED-900	3	3	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-1200	1	1	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	2	2	0
				70'	TLC-LED-1500	3	3	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	17.5'	TLC-BT-575	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	2	2	0
2	F1-F2	100'	-	15.5'	TLC-BT-575	2	2	0
				100'	TLC-LED-1500	9	9	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
24	Totals					140	140	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



Grid Summary

Name:	**North House Spill @ 10' AFG**
Spacing:	30.0' x 10.0'
Height:	0.0' above grade

Illumination Summary

	MAINTAINED MAX CANDELA (PER LIGHTBANK)
	Entire Grid
Scan Average:	**954.7**
Maximum:	2099.9
Minimum:	226.7
Avg/Min:	4.21
Max/Min:	**9.26**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	12
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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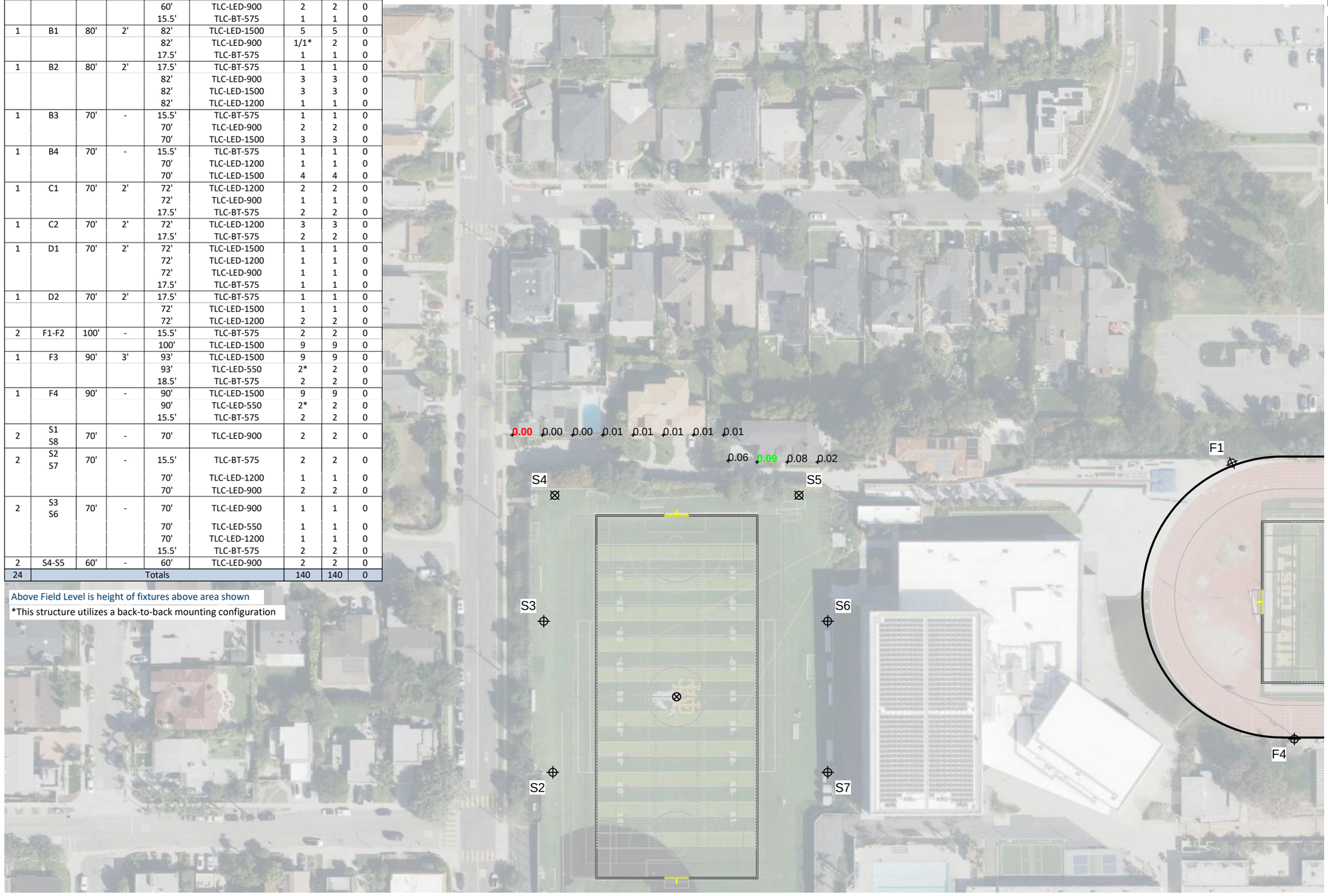
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	17.5'	TLC-BT-575	1	1	0
				82'	TLC-LED-900	3	3	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-1200	1	1	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	2	2	0
				70'	TLC-LED-1500	3	3	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	17.5'	TLC-BT-575	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	2	2	0
2	F1-F2	100'	-	15.5'	TLC-BT-575	2	2	0
				100'	TLC-LED-1500	9	9	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
24	Totals					140	140	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

ENGINEERED DESIGN By: EFox • File #186768F • 03-Nov-25

Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**North House Spill @ 15' AFG**
Spacing:	30.0' x 10.0'
Height:	5.0' above grade

Illumination Summary

	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.0**
Maximum:	0.1
Minimum:	0.0
Avg/Min:	14.36
Max/Min:	**51.67**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	12
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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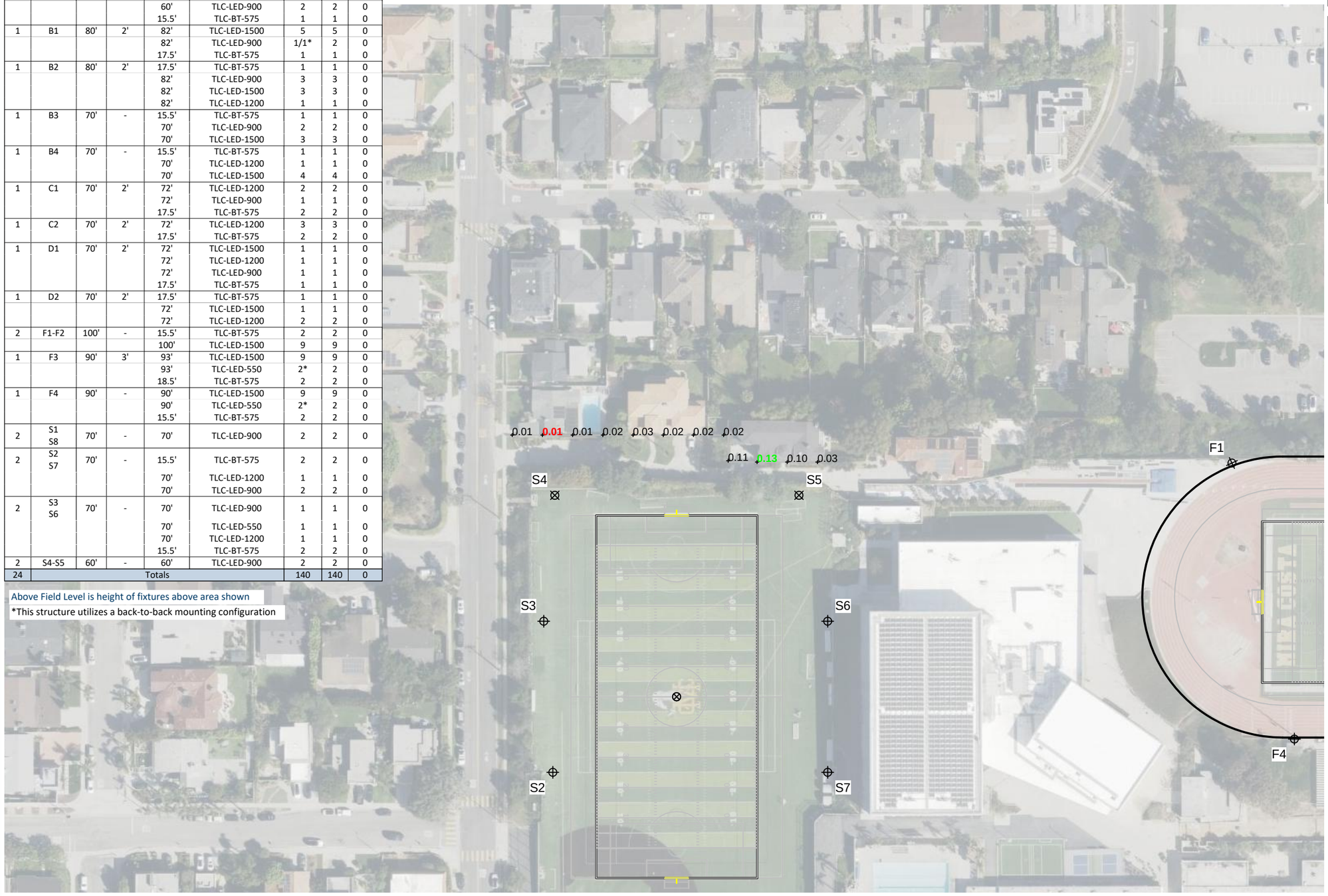
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	17.5'	TLC-BT-575	1	1	0
				82'	TLC-LED-900	3	3	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-1200	1	1	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	2	2	0
				70'	TLC-LED-1500	3	3	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	17.5'	TLC-BT-575	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	2	2	0
2	F1-F2	100'	-	15.5'	TLC-BT-575	2	2	0
				100'	TLC-LED-1500	9	9	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
24	Totals					140	140	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

ENGINEERED DESIGN By: EFox • File #186768F • 03-Nov-25

Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**North House Spill @ 15' AFG**
Spacing:	30.0' x 10.0'
Height:	5.0' above grade

Illumination Summary

MAINTAINED MAX VERTICAL FOOTCANDLES	Entire Grid
Scan Average:	**0.0**
Maximum:	0.1
Minimum:	0.0
Avg/Min:	7.82
Max/Min:	**24.67**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	12
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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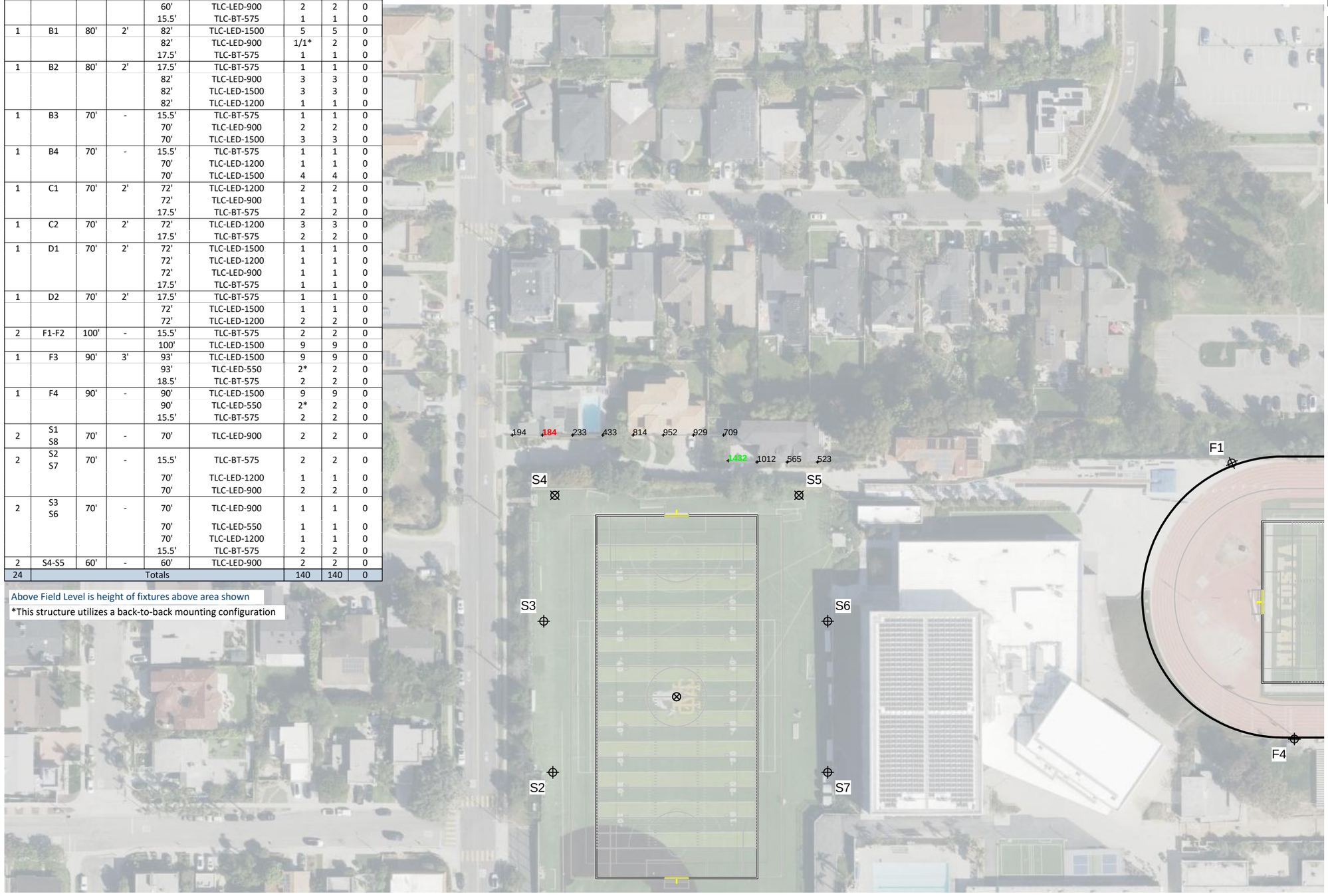
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	17.5'	TLC-BT-575	1	1	0
				82'	TLC-LED-900	3	3	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-1200	1	1	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	2	2	0
				70'	TLC-LED-1500	3	3	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	17.5'	TLC-BT-575	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	2	2	0
2	F1-F2	100'	-	15.5'	TLC-BT-575	2	2	0
				100'	TLC-LED-1500	9	9	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
24	Totals					140	140	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

ENGINEERED DESIGN By: EFox • File #186768F • 03-Nov-25

Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**North House Spill @ 15' AFG**
Spacing:	30.0' x 10.0'
Height:	5.0' above grade

Illumination Summary

	MAINTAINED MAX CANDELA (PER LIGHTBANK)
	Entire Grid
Scan Average:	**665.0**
Maximum:	1432.3
Minimum:	183.7
Avg/Min:	3.62
Max/Min:	**7.80**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	12
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**West Project Spill @ -8ft.**
Spacing:	30.0'
Height:	-8.0' above grade

Illumination Summary

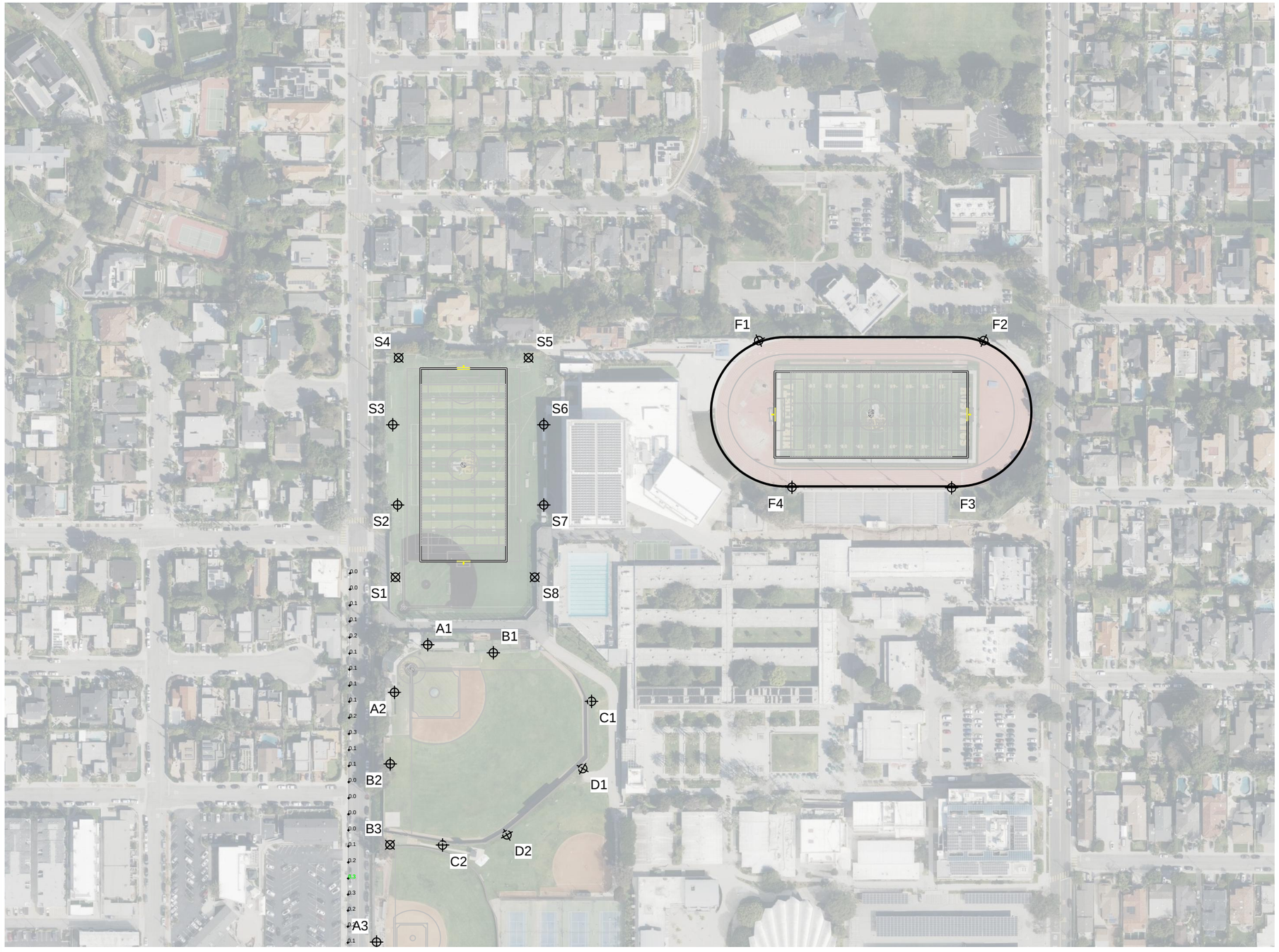
	INITIAL HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.098**
Maximum:	0.299
Minimum:	0.000
CU:	0.00
No. of Points:	33
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



SCALE IN FEET 1 : 200

0' 200' 400'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Mira Costa High School North Field

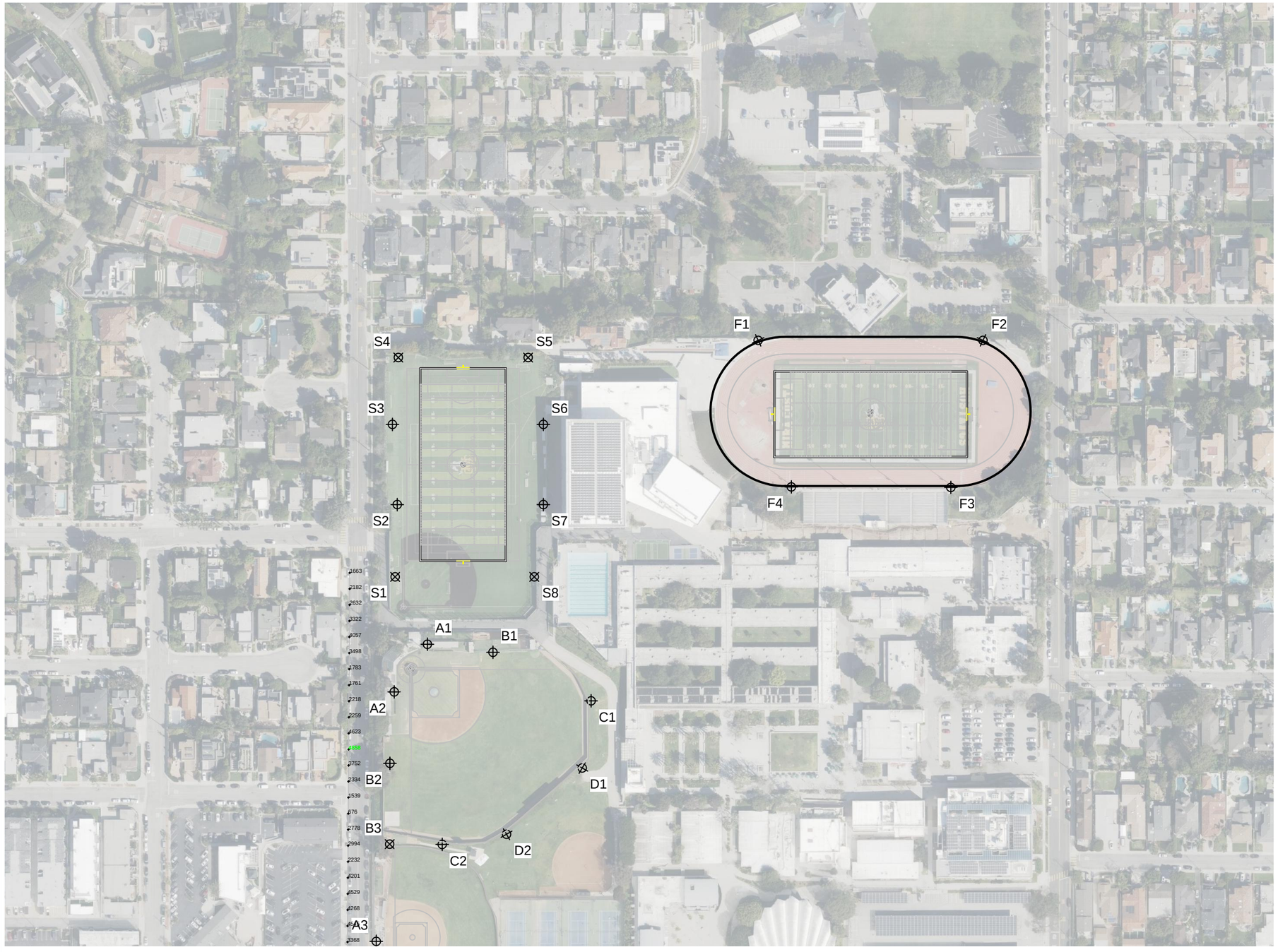
Manhattan Beach, CA

Grid Summary

Name:	**West Project Spill @ -8ft.(1)**
Spacing:	30.0'
Height:	-8.0' above grade

Illumination Summary

	INITIAL CANDELA (PER FIXTURE)
	Entire Grid
Scan Average:	**2434.532**
Maximum:	4858.107
Minimum:	5.637
CU:	0.00
No. of Points:	33
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW



Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 200

0' 200' 400'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Mira Costa High School North Field

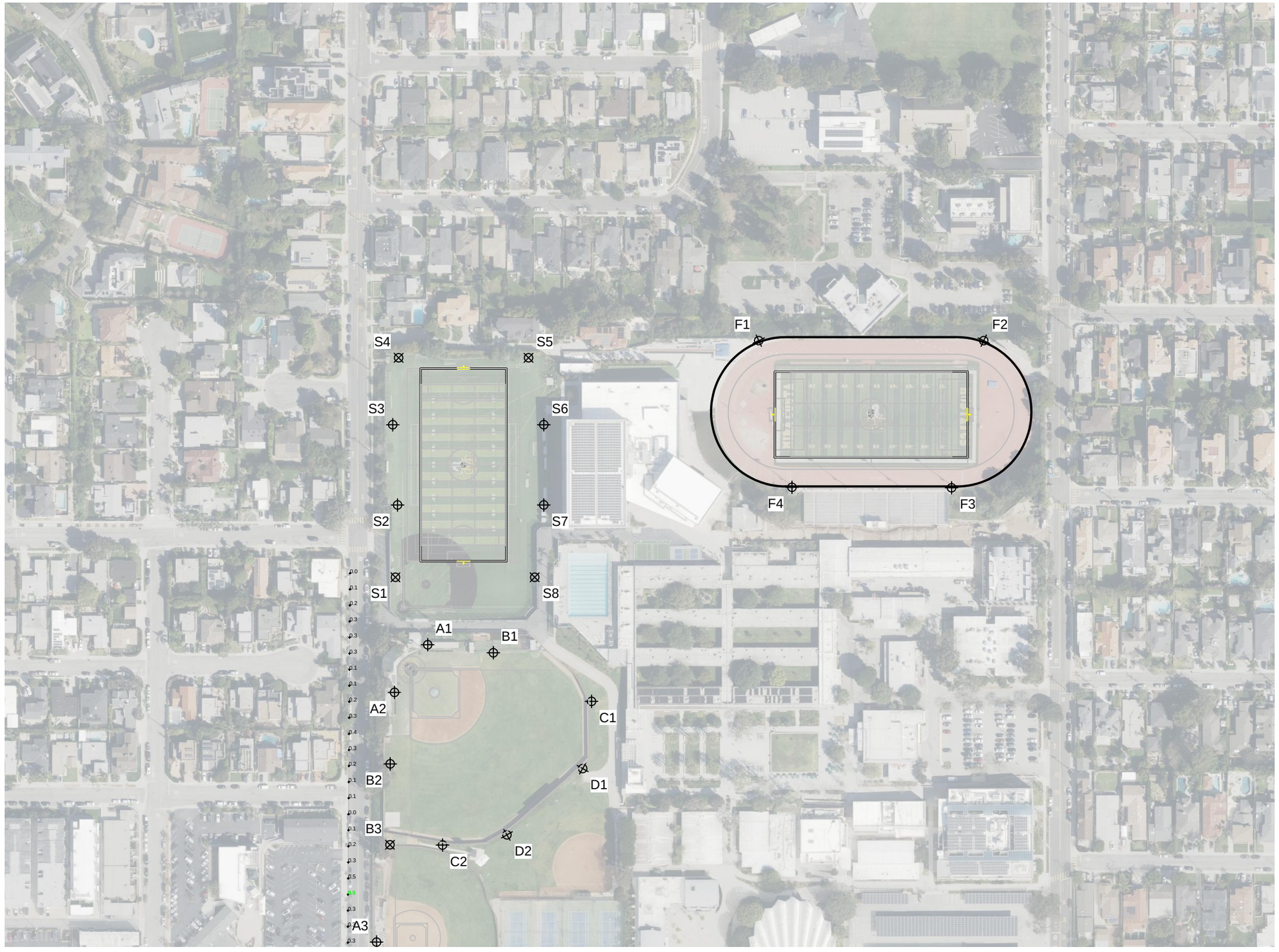
Manhattan Beach, CA

Grid Summary

Name:	**West Project Spill @ -8ft.(1)**
Spacing:	30.0'
Height:	-8.0' above grade

Illumination Summary

	INITIAL MAX VERTICAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.175**
Maximum:	0.501
Minimum:	0.000
CU:	0.00
No. of Points:	33
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW



Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 200

0' 200' 400'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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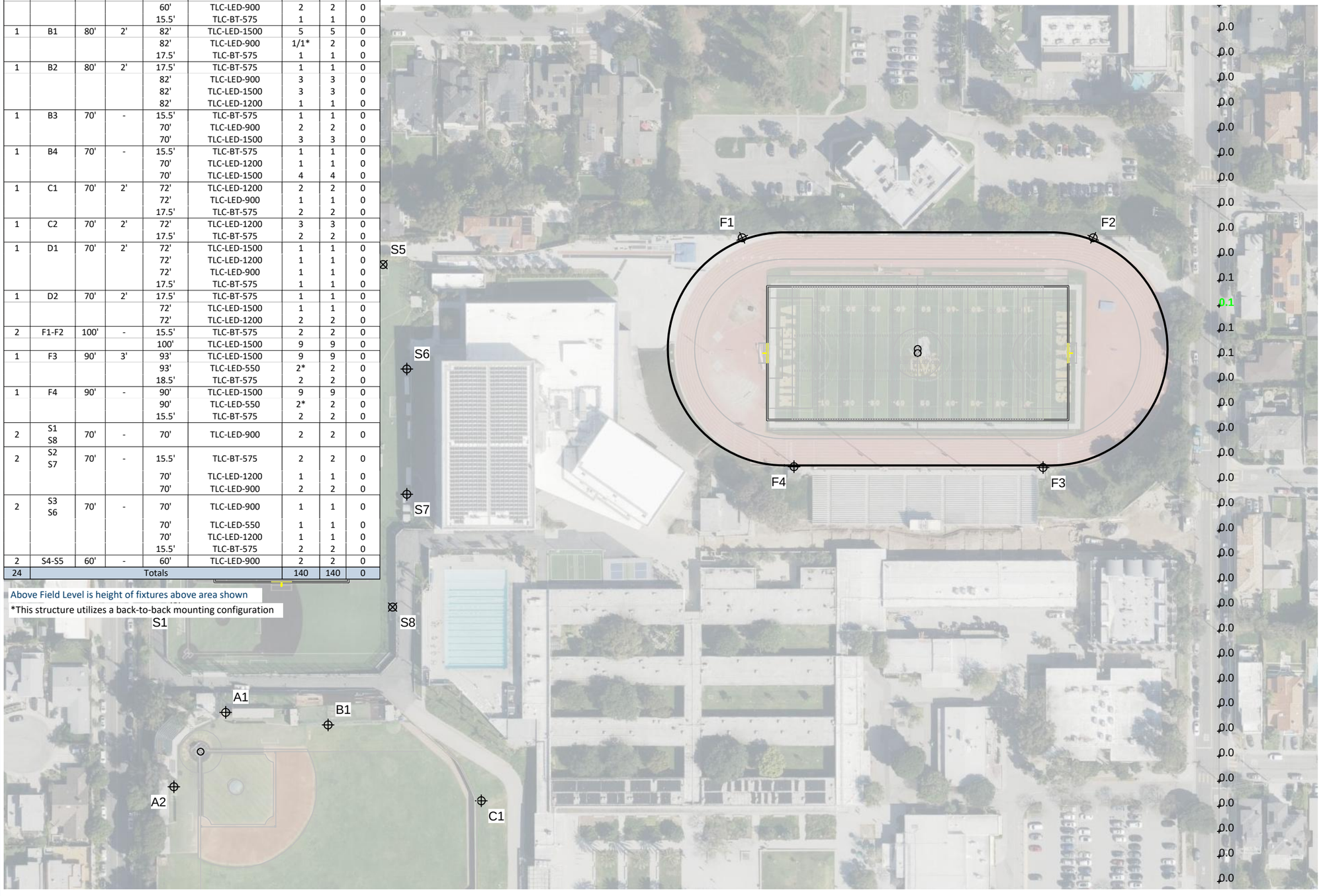
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	17.5'	TLC-BT-575	1	1	0
				82'	TLC-LED-900	3	3	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-1200	1	1	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	2	2	0
				70'	TLC-LED-1500	3	3	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	17.5'	TLC-BT-575	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	2	2	0
2	F1-F2	100'	-	15.5'	TLC-BT-575	2	2	0
				100'	TLC-LED-1500	9	9	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
24	Totals					140	140	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**East Project Spill @ 3ft.**
Spacing:	30.0'
Height:	3.0' above grade

Illumination Summary

	INITIAL HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.006**
Maximum:	0.073
Minimum:	0.000
CU:	0.00
No. of Points:	55
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 120

0' 120' 240'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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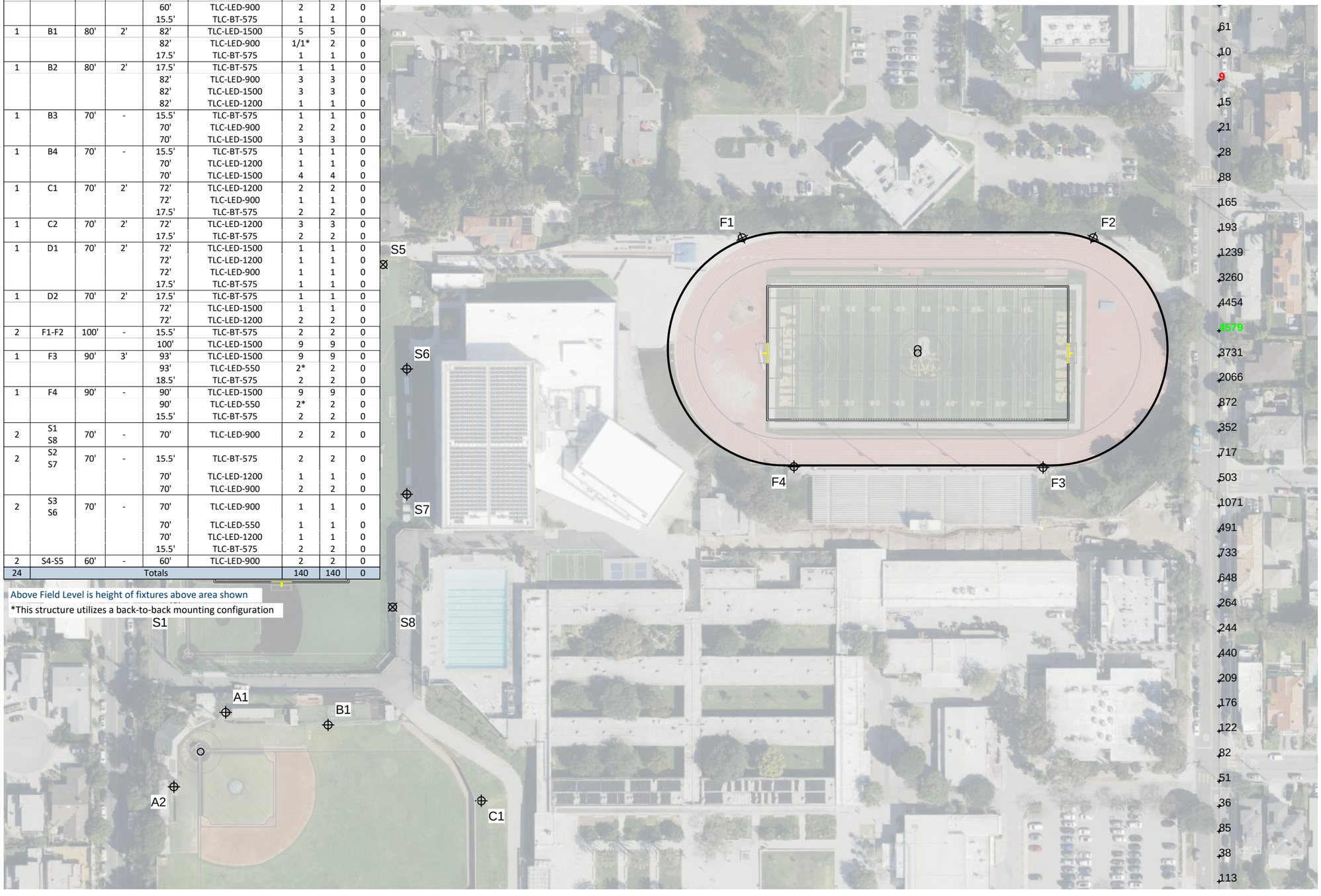
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	17.5'	TLC-BT-575	1	1	0
				82'	TLC-LED-900	3	3	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-1200	1	1	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	2	2	0
				70'	TLC-LED-1500	3	3	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	17.5'	TLC-BT-575	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	2	2	0
2	F1-F2	100'	-	15.5'	TLC-BT-575	2	2	0
				100'	TLC-LED-1500	9	9	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
24	Totals					140	140	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**East Project Spill @ 5ft.**
Spacing:	30.0'
Height:	5.0' above grade

Illumination Summary

	INITIAL CANDELA (PER FIXTURE)
	Entire Grid
Scan Average:	**572.198**
Maximum:	4579.312
Minimum:	9.068
CU:	0.00
No. of Points:	55
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 120

0' 120' 240'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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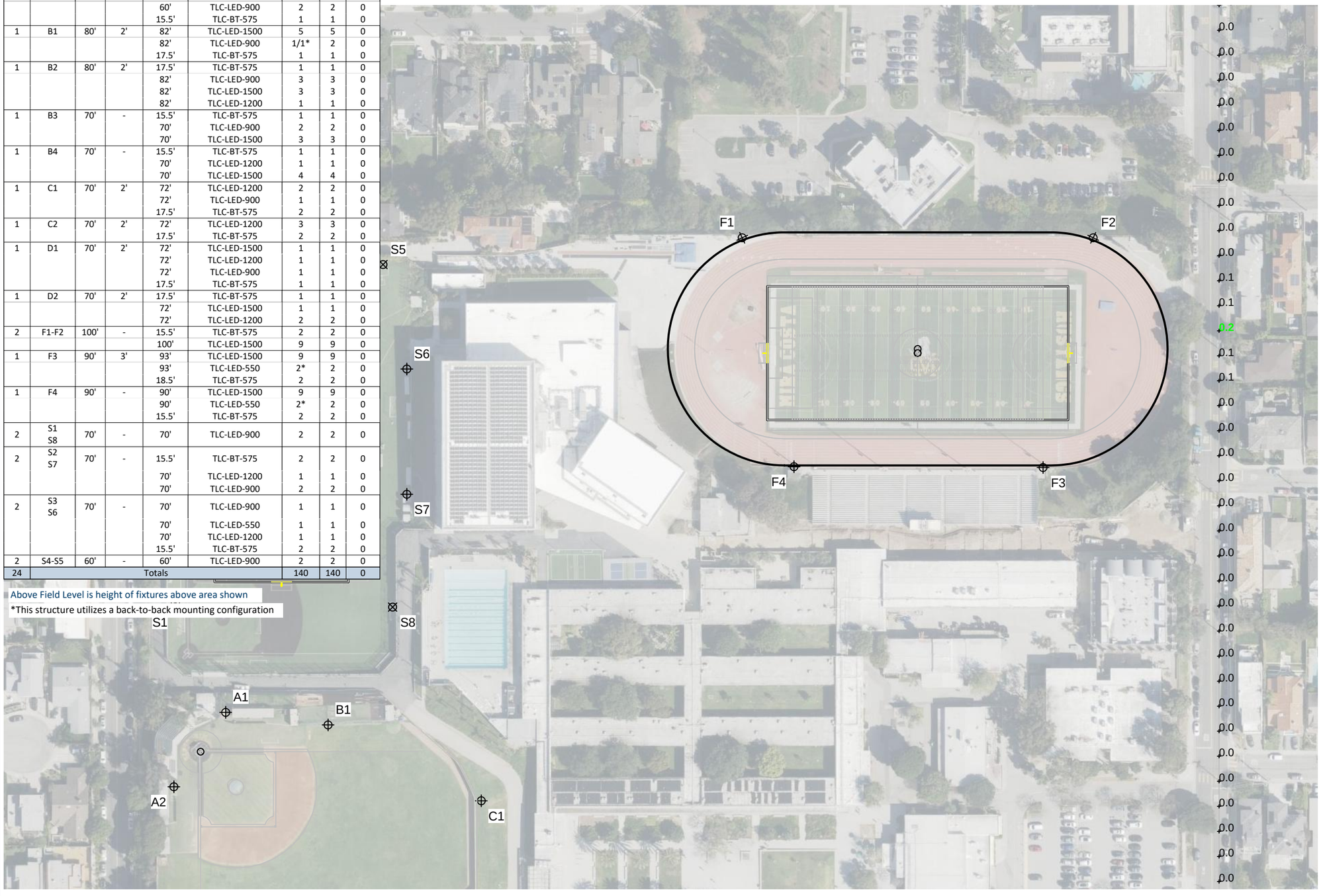
Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	2'	72'	TLC-LED-1200	4	4	0
				17.5'	TLC-BT-575	1	1	0
2	A3-A4	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
1	B1	80'	2'	82'	TLC-LED-1500	5	5	0
				82'	TLC-LED-900	1/1*	2	0
				17.5'	TLC-BT-575	1	1	0
1	B2	80'	2'	17.5'	TLC-BT-575	1	1	0
				82'	TLC-LED-900	3	3	0
				82'	TLC-LED-1500	3	3	0
				82'	TLC-LED-1200	1	1	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	2	2	0
				70'	TLC-LED-1500	3	3	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-1500	4	4	0
1	C1	70'	2'	72'	TLC-LED-1200	2	2	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	2	2	0
1	C2	70'	2'	72'	TLC-LED-1200	3	3	0
				17.5'	TLC-BT-575	2	2	0
1	D1	70'	2'	72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	1	1	0
				72'	TLC-LED-900	1	1	0
				17.5'	TLC-BT-575	1	1	0
1	D2	70'	2'	17.5'	TLC-BT-575	1	1	0
				72'	TLC-LED-1500	1	1	0
				72'	TLC-LED-1200	2	2	0
2	F1-F2	100'	-	15.5'	TLC-BT-575	2	2	0
				100'	TLC-LED-1500	9	9	0
1	F3	90'	3'	93'	TLC-LED-1500	9	9	0
				93'	TLC-LED-550	2*	2	0
				18.5'	TLC-BT-575	2	2	0
1	F4	90'	-	90'	TLC-LED-1500	9	9	0
				90'	TLC-LED-550	2*	2	0
				15.5'	TLC-BT-575	2	2	0
2	S1 S8	70'	-	70'	TLC-LED-900	2	2	0
2	S2 S7	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	1	1	0
				70'	TLC-LED-900	2	2	0
2	S3 S6	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-550	1	1	0
				70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	2	2	0
2	S4-S5	60'	-	60'	TLC-LED-900	2	2	0
24	Totals					140	140	0

Above Field Level is height of fixtures above area shown

*This structure utilizes a back-to-back mounting configuration



Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**East Project Spill @ 5ft.**
Spacing:	30.0'
Height:	5.0' above grade

Illumination Summary

	INITIAL MAX VERTICAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.014**
Maximum:	0.158
Minimum:	0.000
CU:	0.00
No. of Points:	55
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 120

0' 120' 240'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**Farthest North Project Spill @ 3ft.(1)**
Spacing:	30.0'
Height:	3.0' above grade

Illumination Summary

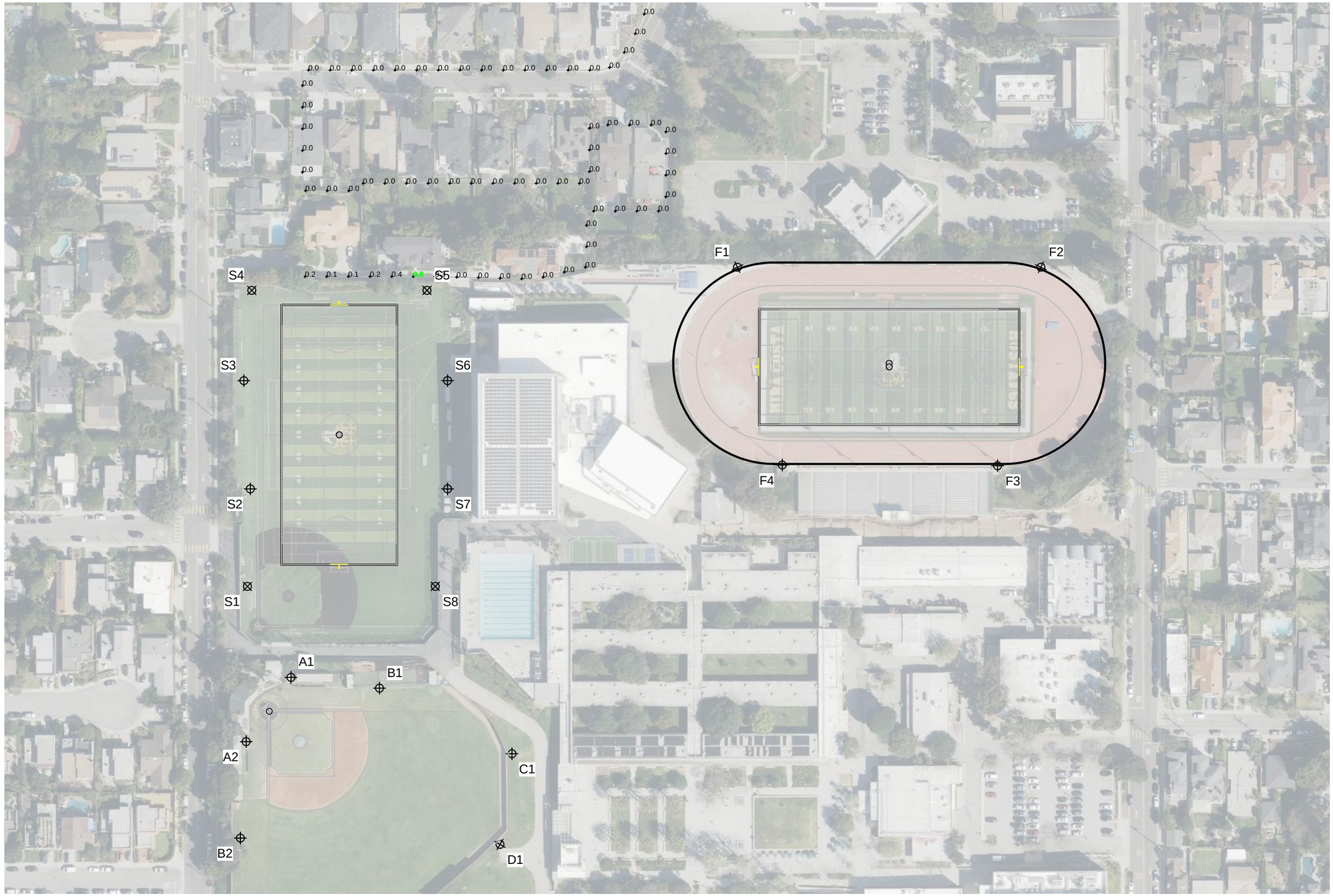
	INITIAL HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.025**
Maximum:	0.824
Minimum:	0.000
CU:	0.00
No. of Points:	89
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



SCALE IN FEET 1 : 140

0' 140' 280'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Mira Costa High School North Field

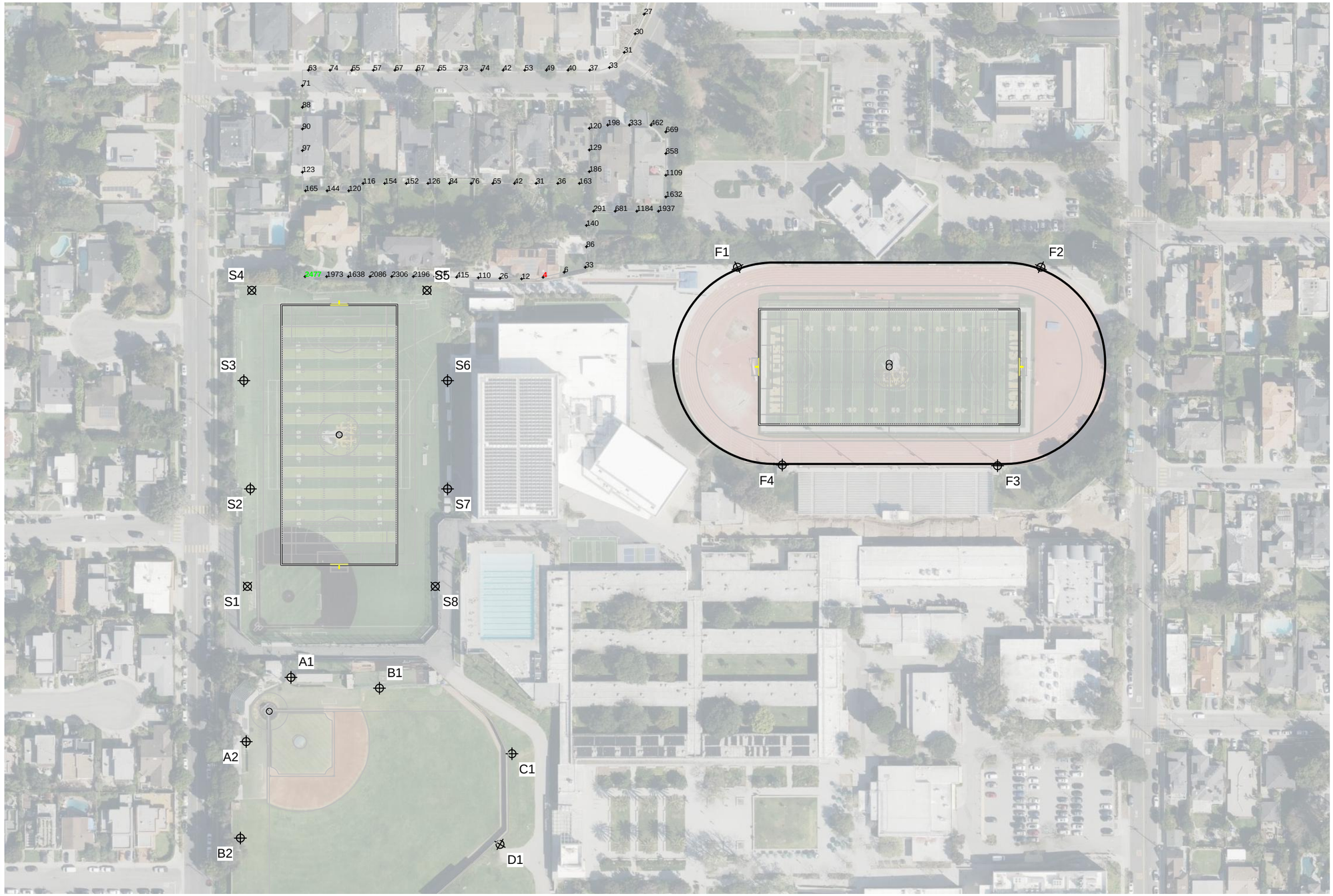
Manhattan Beach, CA

Grid Summary

Name:	**Farthest North Project Spill @ 5ft.(1)**
Spacing:	30.0'
Height:	5.0' above grade

Illumination Summary

	INITIAL CANDELA (PER FIXTURE)
	Entire Grid
Scan Average:	**338.660**
Maximum:	2477.435
Minimum:	3.830
CU:	0.00
No. of Points:	89
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW



Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 140

0' 140' 280'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Mira Costa High School North Field

Manhattan Beach, CA

Grid Summary

Name:	**Farthest North Project Spill @ 5ft.(1)**
Spacing:	30.0'
Height:	5.0' above grade

Illumination Summary

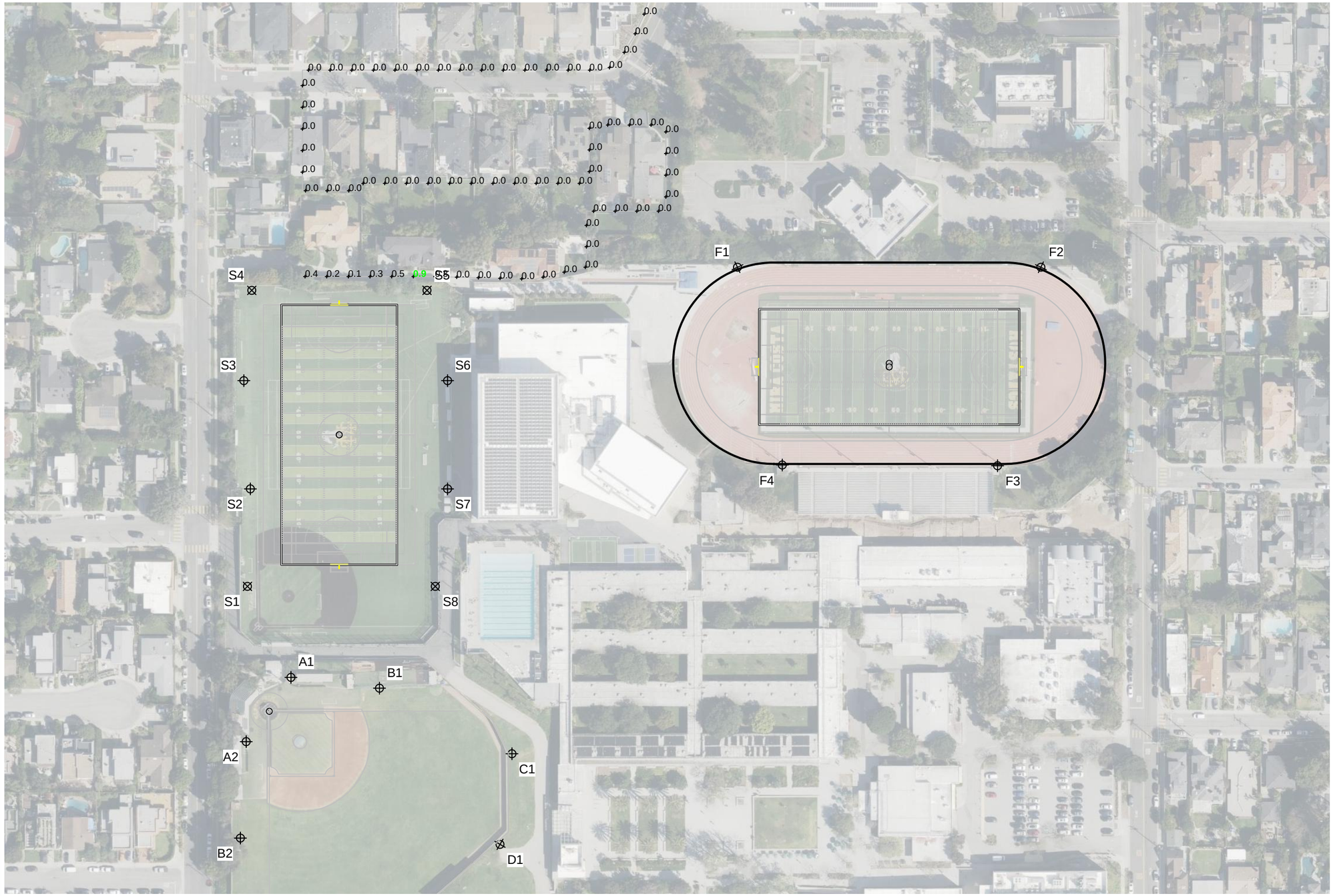
	INITIAL MAX VERTICAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.031**
Maximum:	0.863
Minimum:	0.000
CU:	0.00
No. of Points:	89
FIXTURE INFORMATION	
Applied Circuits:	A,B,C,D,E
No. of Fixtures:	**140**
Total Load:	147.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



SCALE IN FEET 1 : 140

0' 140' 280'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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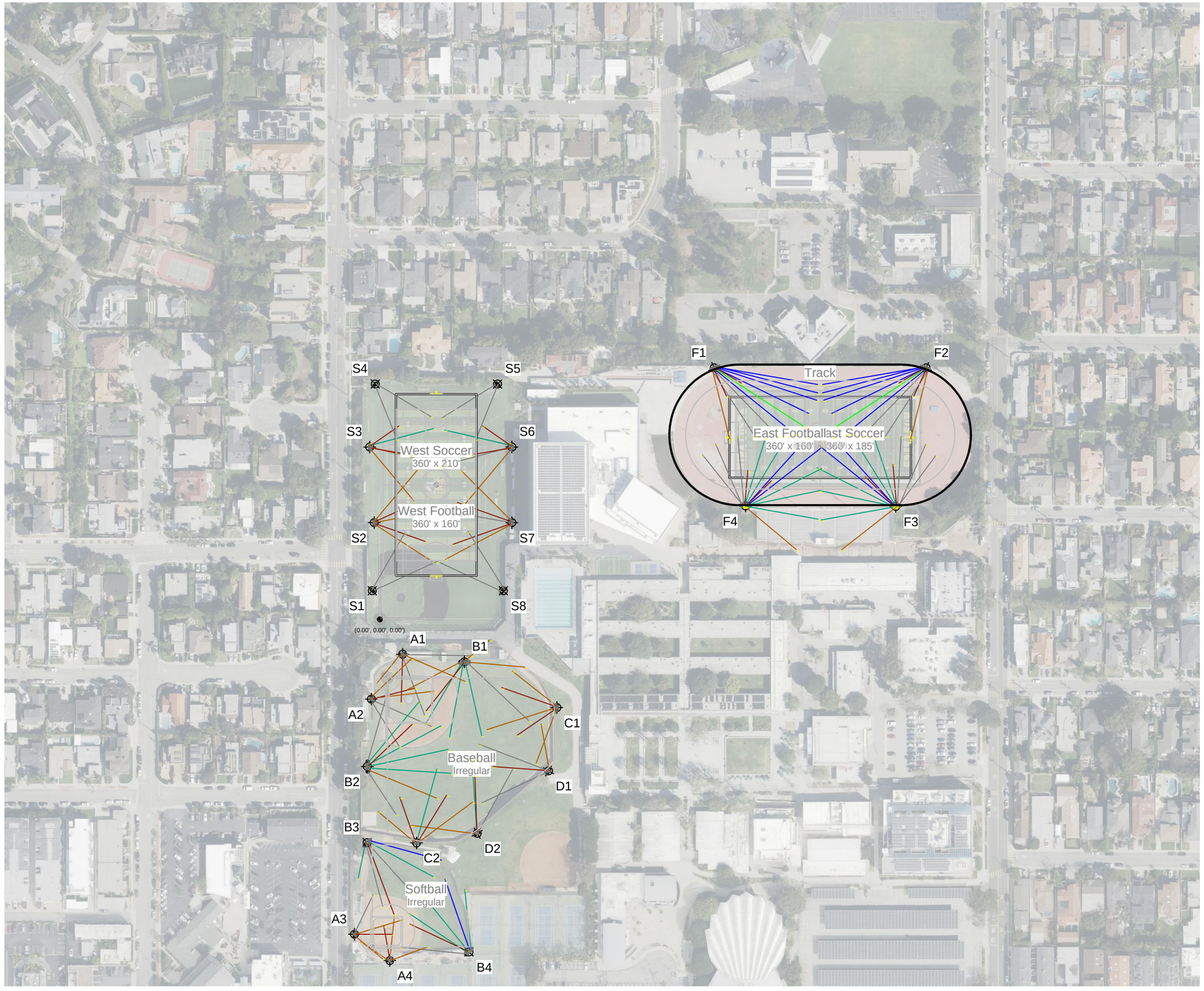

SCALE IN FEET 1 : 200

0' 200' 400'

ENGINEERED DESIGN By: EFox • File #186768F • 03-Nov-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

Mira Costa High School North Field

Manhattan Beach, CA

Equipment Layout

INCLUDES:
· Baseball
· East Football
· East Soccer
· Egress
· Softball
· Track
· West Football
· West Soccer

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Equipment List For Areas Shown

Structure				Fixtures		
QTY	STRUCTURE ID	SIZE	GLOBAL ELEVATION	ABOVE GLOBAL LEVEL	FIXTURE TYPE	QTY/POLE
2	A1-A2	70'	2'	72' 17.5'	TLC-LED-1200 TLC-BT-575	4 1
2	A3-A4	60'	-	60' 60' 15.5'	TLC-LED-1200 TLC-LED-900 TLC-BT-575	1 2 1
1	B1	80'	2'	82' 82' 17.5'	TLC-LED-1500 TLC-LED-900 TLC-BT-575	5 1/1* 1
1	B2	80'	2'	17.5' 82' 82' 82'	TLC-BT-575 TLC-LED-900 TLC-LED-1500 TLC-LED-1200	1 3 3 1
1	B3	70'	-	15.5' 70' 70'	TLC-BT-575 TLC-LED-900 TLC-LED-1500	1 2 3
1	B4	70'	-	15.5' 70' 70'	TLC-BT-575 TLC-LED-1200 TLC-LED-1500	1 1 4
1	C1	70'	2'	72' 72' 17.5'	TLC-LED-1200 TLC-LED-900 TLC-BT-575	2 1 2
1	C2	70'	2'	72' 17.5'	TLC-LED-1200 TLC-BT-575	3 2
1	D1	70'	2'	72' 72' 72' 17.5'	TLC-LED-1500 TLC-LED-1200 TLC-LED-900 TLC-BT-575	1 1 1 1
1	D2	70'	2'	17.5' 72' 72'	TLC-BT-575 TLC-LED-1500 TLC-LED-1200	1 1 2
2	F1-F2	100'	-	15.5' 100'	TLC-BT-575 TLC-LED-1500	2 9
1	F3	90'	3'	93' 93' 18.5'	TLC-LED-1500 TLC-LED-550 TLC-BT-575	9 2* 2

*This structure utilizes a back-to-back mounting configuration
Above Global Level is height of fixtures above design (0,0,0)

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Mira Costa High School North Field

Manhattan Beach, CA

Equipment Layout

INCLUDES:
· Baseball
· East Football
· East Soccer
· Egress
· Softball
· Track
· West Football
· West Soccer

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Equipment List For Areas Shown

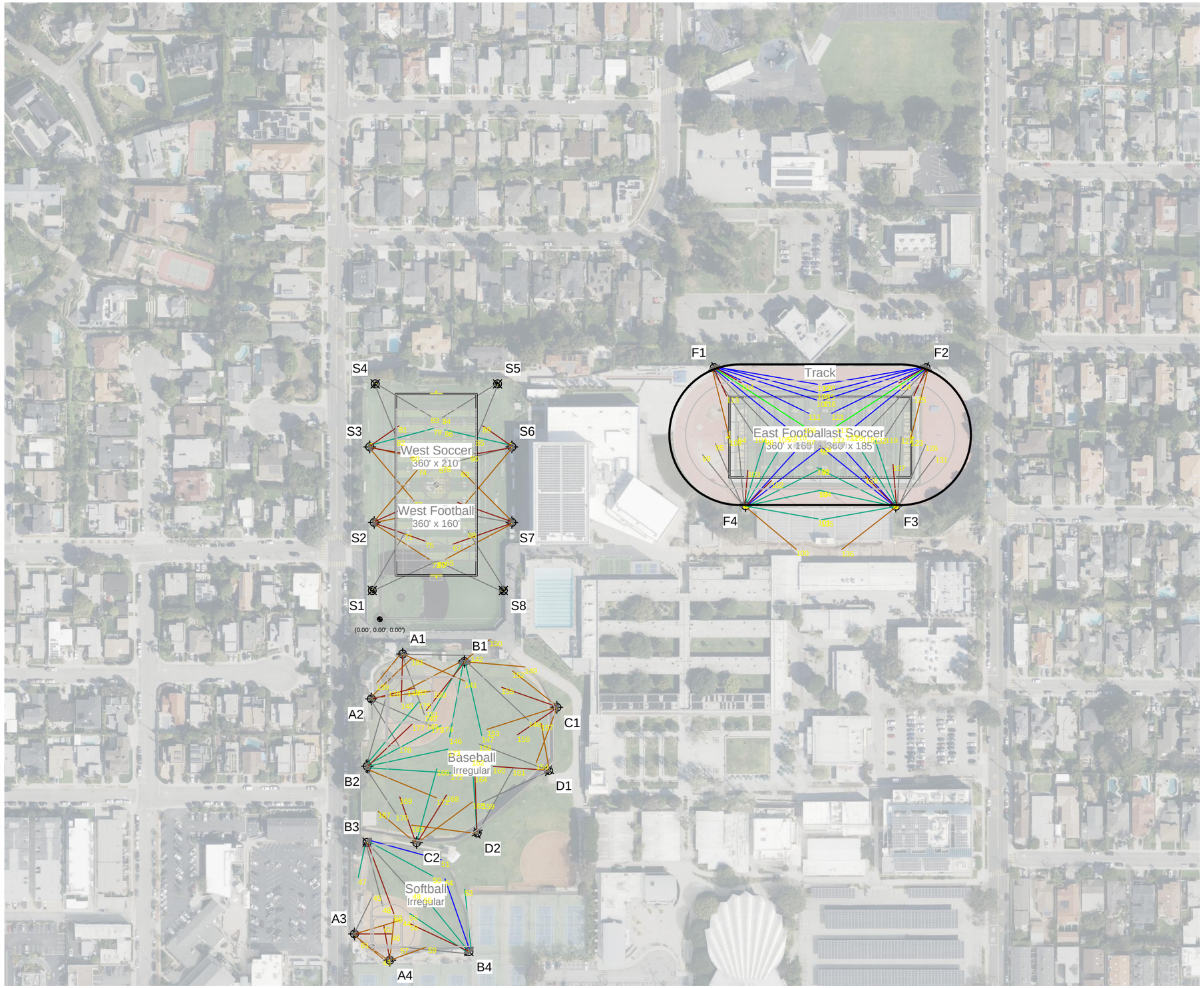
Structure				Fixtures		
QTY	STRUCTURE ID	SIZE	GLOBAL ELEVATION	ABOVE GLOBAL LEVEL	FIXTURE TYPE	QTY/POLE
1	F4	90'	-	90' 90' 15.5'	TLC-LED-1500 TLC-LED-550 TLC-BT-575	9 2* 2
2	S1 S8	70'	-	70'	TLC-LED-900	2
2	S2 S7	70'	-	15.5' 70' 70'	TLC-BT-575 TLC-LED-1200 TLC-LED-900	2 1 2
2	S3 S6	70'	-	70' 70' 70' 15.5'	TLC-LED-900 TLC-LED-550 TLC-LED-1200 TLC-BT-575	1 1 1 2
2	S4-S5	60'	-	60'	TLC-LED-900	2
24	Totals					140

*This structure utilizes a back-to-back mounting configuration

Above Global Level is height of fixtures above design (0,0,0)

Single Fixture Amperage Draw Chart

Driver Specifications (.90 min power factor)	Line Amperage Per Fixture (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1500	8.4	7.9	7.3	6.3	5.0	4.6	3.6
TLC-LED-1200	6.9	6.5	6.0	5.2	4.2	3.8	3.0
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9	2.3
TLC-BT-575	3.3	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-550	3.2	3.0	2.8	2.4	1.9	1.8	1.4



SCALE IN FEET 1 : 200

0' 200' 400'

ENGINEERED DESIGN By: EFox • File #186768F • 03-Nov-25

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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APPENDIX C:
AIR QUALITY ANALYSIS



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Air Quality Appendix

Assumptions Worksheet

CalEEMod Inputs- Mira Costa HS Field Component, Construction

Name:	Mira Costa HS Field Component
Project Number:	MBUS-04
Project Location:	1401 Artesia Blvd, Manhattan Beach, CA 90266
County:	South Coast
Climate Zone:	8
Land Use Setting:	Urban
Gas Utility Company:	Southern California Gas
Electric Utility Company:	Southern California Edison
Air Basin:	South Coast Air Basin
Air District:	South Coast AQMD
SRA:	3 - Southwest Los Angeles County Coastal

Project Site Acreage	37
Disturbed Site Acreage for Field Lighting	0.65

Project Components	Size Metric	Acres
Construction - Field Lighting		
Number of Light Poles[1]	24	NA
Area disturbed per light pole (SF)	1,000	0.02
Total for Light Poles	**24,000**	0.55
E-Bike Parking Area[2]	4,500	0.10

Notes:

[1] Accounts for four replacement field lights at Waller football stadium, twelve new light poles at softball/baseball field, and eight new light poles at West Field.

[2] Based on Google Earth estimate.

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet	Landscaped Area
Field lighting						
Parking	Other Non-Asphalt Surfaces	28.50	1000 SQFT	0.65	NA	NA
				0.65		

Notes:

[1] Acreage accounts for replacement and installation of lighting poles at three playfields and e-bike parking area on campus.

Soil Haul

Construction Activities	Volume (CY)[1]	Haul Truck Capacity (CY)[2]	Haul Distance (miles)[2]	Total Trip Ends	Duration (days)	Trip Ends per Day
Field Lighting - Site Preparation Export	150	16	20	19	1	19

Notes:

[1] Based on District information.

[2] CalEEMod default used.

Construction Mitigation

SCAQMD Rule 403

Water Unpaved Roads	Frequency:	2	per day
	PM10:	55	% Reduction
	PM25:	55	% Reduction
Water Exposed Area	Frequency:	2	per day
	PM10:	61	% Reduction
	PM25:	61	% Reduction
Unpaved Roads	Vehicle Speed:	25	mph

SCAQMD Rule 1186

	Clean Paved Road	9	% PM Reduction

CalEEMod Inputs- Facilities Master Plan Component, Construction

Name:	Mira Costa HS Facilities Master Plan Component
Project Number:	MBUS-04
Project Location:	1401 Artesia Blvd, Manhattan Beach, CA 90266
County:	South Coast
Climate Zone:	8
Land Use Setting:	Urban
Gas Utility Company:	Southern California Gas
Electric Utility Company:	Southern California Edison
Air Basin:	South Coast Air Basin
Air District:	South Coast AQMD
SRA:	3 - Southwest Los Angeles County Coastal

Project Site Acreage	37
Disturbed Site Acreage for Campus Master Plan	1.66

Building Demolition	***SQFT***	***Amount of Debris (Tons)***
One-Story Library	10,500	483

Project Components	Gross SF	Acres	Stories
New Construction - Facilities Master Plan			
One-Story Library	20,000	0.46	1
Renovation - Facilities Master Plan			
Two One-Story Classrooms	11,600	0.27	1
One-Story Multi-Purpose and Food Service Building	32,000	0.73	1
Swimming Pool	8,800	0.20	NA

Notes:

[1] Square footages based on Table 1, Proposed Changes to Campus Buildings, in Section 2.3, Project Chateristics.

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet	Landscaped Area
Facilities Master Plan						
Educational	High School	63.60	1000 SQFT	1.46	63,600	NA
Parking	Other Non-Asphalt Surfaces	8.80	1000 SQFT	0.20	8,800	NA
				1.66		

Notes:

[1] Acreage accounts for new construction and renovation of existing school buildings.

Demolition

Component	Amount to be Demolished[1]	Haul Truck Capacity (Tons)[2]	Haul Distance (miles)[2]	Total Trip Ends	Duration (days)	Trip Ends Per Day
Asphalt (Tons)	483	8	20	121	36	3

Notes:

[1] Based on District information.

[2] CalEEMod default used.

Architectural Coating

	Percent Painted
Interior Painted:	100%
Exterior Painted:	100%

South Coast AQMD Rule 1113

Interior Paint VOC content: 50 grams per liter

Exterior Paint VOC content: 50 grams per liter

Structures	Land Use Square Feet	CalEEMod Factor[2]	Total Paintable Surface Area	Paintable Interior Area[1]	Paintable Exterior Area[1]
Non-Residential Structures					
School Buildings	63,600	2.0	127,200	95,400	31,800
				95,400	**31,800**
Parking					
Other Non-Asphalt Surfaces	8,800	6%	528	-	528
					528

Notes:

[1] CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.

[2] CalEEMod assumes the total surface for painting equals 2 times the floor square footage for nonresidential square footage defined by user.

[3] Assumes that all parking and non-asphalt surfaces will be striped. CalEEMod methodology assumes 6% of surface area is striped.

Construction Mitigation

SCAQMD Rule 403

Water Unpaved Roads	Frequency:	2	per day
	PM10:	55	% Reduction
	PM25:	55	% Reduction
Water Exposed Area	Frequency:	2	per day
	PM10:	61	% Reduction
	PM25:	61	% Reduction
Unpaved Roads	Vehicle Speed:	25	mph

SCAQMD Rule 1186

Clean Paved Road	9	% PM Reduction

Building Demolition Haul Trip Calculation: Facilities Master Plan

Source: CalEEMod User's Guide Version 2022, Appendix C

Conversion factors

0.046	ton/SF	Building Debris
2.0	CY/ton	Building Debris
1.2641662	tons/cy	Soil
20	tons	Truck Capacity in tons
16	CY	Truck Capacity in CY
0.8	CY/ton	Soil

Building	BSF Demo	Tons/SF	Tons	CY of Building Materials	Haul Truck (CY)	Haul Truck (Ton)	Round Trips	Total Trip Ends
Building Demolition	10,500	0.046	483	966	16	20	61	122

Construction Activities and Schedule Assumptions: Field Lighting

* based on schedule provided by District

CalEEMod Default Construction Schedule				
Construction Activities	**Phase Type**	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Demolition	Demolition	6/1/2026	6/15/2026	11
Site Preparation	Site Preparation	6/16/2026	6/17/2026	1
Grading	Grading	6/18/2026	6/20/2026	2
Building Construction	Building Construction	6/21/2026	11/8/2026	100
Paving	Paving	11/9/2026	11/16/2026	6
Architectural Coating	Architectural Coating	11/17/2026	11/24/2026	6
			Total Days	**176**

Normalization Calculations				
CalEEMod Defaults Construction Duration			**Assumed Construction Duration**	
176	days of construction		6/1/2026	9/2/2026
0.48	years of construction		93	days
5.79	months of construction		3.06	months
		Norm Factor:	0.53	

Construction Schedule (CalEEMod)			
Construction Activities	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Site Preparation	6/1/2026	6/1/2026	1
Utility Trenching	6/2/2026	6/2/2026	1
Field Lighting Installation	6/3/2026	8/28/2026	63
Paving	8/29/2026	9/2/2026	3

Construction Activities and Schedule Assumptions: Facilities Master Plan

* based on schedule provided by District

		CalEEMod Default Construction Schedule		
Construction Activities	**Phase Type**	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Demolition	Demolition	6/1/2027	6/29/2027	21
Site Preparation	Site Preparation	6/30/2027	7/2/2027	1
Grading	Grading	7/3/2027	7/8/2027	4
Building Construction	Building Construction	7/9/2027	4/14/2028	201
Paving	Paving	4/3/2028	4/14/2028	10
Architectural Coating	Architectural Coating	4/3/2028	4/14/2028	10
			Total Days	**318**

Notes:

[1] Conservatively assume building construction, paving, and architectural coating activities overlap.

Normalization Calculations				
CalEEMod Defaults Construction Duration			**Assumed Construction Duration**	
318	days of construction		6/1/2027	12/1/2028
0.87	years of construction		549	days
10.45	months of construction		18.05	months
		Norm Factor:	1.73	

Construction Schedule (CalEEMod)			
Construction Activities	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Demolition	6/1/2027	7/20/2027	36
Site Preparation	7/21/2027	7/22/2027	2
Grading	7/23/2027	8/2/2027	7
Building Construction	8/3/2027	12/1/2028	349
Paving	11/9/2028	12/1/2028	17
Architectural Coating	11/9/2028	12/1/2028	17

Overlapping Construction Schedule (CalEEMod)

Construction Activities	Start Date	End Date	CalEEMod Duration (Workday)
Demolition	6/1/2027	7/20/2027	36
Site Preparation	7/21/2027	7/22/2027	2
Grading	7/23/2027	8/2/2027	7
Building Construction	8/3/2027	11/8/2028	332
Building Construction, Paving, and Architectural Coating	11/9/2028	12/1/2028	17

CalEEMod Construction Off-Road Equipment Inputs: Field Lighting

Source: CalEEMod defualts (except where noted).

Construction Equipment Details			
Provided Equipment	**# of Equipment**	**hr/day**	**total trips per day**
Site Preparation			
Tractors/Loaders/Backhoes	1	8	
Graders	1	8	
Worker Trips			5
Vendor Trips			1
Hauling Trips			19
Water Trucks (added to Vendor Trips)	Acres Disturbed:	1	6
	Onsite Travel (mi/day)	0.83	
Modified Vendor Trips			7
Utility Trenching[1]			
Tractors/Loaders/Backhoes	1	8	
Forklifts	1	8	
Worker Trips			5
Vendor Trips			0
Hauling Trips			0
Water Trucks (added to Vendor Trips)	Acres Disturbed:	0.5	4
	Onsite Travel (mi/day)	0.41	
Modified Vendor Trips			4
Field Lighting Installation[1]			
Forklifts	2	6	
Crane	1	4	
Worker Trips			8
Vendor Trips			0
Hauling Trips			0
Paving			
Cement and Mortar Mixers	4	6	
Pavers	1	7	
Rollers	1	7	
Tractors/Loaders/Backhoes	1	7	
Worker Trips			18
Vendor Trips			2

Hauling Trips	0

Notes:

[1] Based on equipment provided from previous field lighting projects.

Water Truck Vendor Trip Calculation

Amount of Water (gal/acre/day)[1]	Water Truck Capacity (gallons)[2]
10,000	4,000

Notes:

[1] Based on data provided in Guidance for Application for Dust Control Permit

Maricopa County Air Quality Department. 2005, June. Guidance for Application of Dust Control Permit. https://www.epa.gov/sites/default/files/2019-04/documents/mr_guidanceforapplicationfordustcontrolpermit.pdf)

[2] Based on standard water truck capacity:
McLellan Industries. 2025, January (access). Water Trucks. https://www.mclellanindustries.com/trucks/water-trucks/

[3] Assumes that dozers, tractors/loaders/backhoes, and graders can disturb 0.50 acres per day and scrapers can disturb 1 acre per day.

CalEEMod Construction Off-Road Equipment Inputs: Facilities Master Plan

Source: CalEEMod defualts (except where noted).

Construction Equipment Details			
Provided Equipment	**# of Equipment**	**hr/day**	**total trips per day**
Demolition			
Concrete/Industrial Saws	1	8	
Rubber Tired Dozers	1	8	
Tractors/Loaders/Backhoes	3	8	
Worker Trips			13
Vendor Trips			2
Hauling Trips			3
Water Trucks (added to Vendor Trips)	Acres Disturbed:	2.00	8
	Onsite Travel (mi/day)	0.83	
Modified Vendor Trips			10
Site Preparation			
Graders	1	8	
Rubber Tired Dozers	1	7	
Tractors/Loaders/Backhoes	1	8	
Worker Trips			8
Vendor Trips			1
Hauling Trips			0
Water Trucks (added to Vendor Trips)	Acres Disturbed:	1.44	8
	Onsite Travel (mi/day)	1.19	
Modified Vendor Trips			9
Grading			
Graders	1	8	
Rubber Tired Dozers	1	8	
Tractors/Loaders/Backhoes	2	7	
Worker Trips			10
Vendor Trips			3
Hauling Trips			0
Water Trucks (added to Vendor Trips)	Acres Disturbed:	1.88	10
	Onsite Travel (mi/day)	1.55	
Modified Vendor Trips			13
Building Construction			

Cranes	1	6	
Forklifts	1	6	
Generator Sets	1	8	
Tractors/Loaders/Backhoes	1	6	
Welders	3	8	
Worker Trips			27
Vendor Trips			10
Hauling Trips			0
Paving			
Cement and Mortar Mixers	1	6	
Pavers	1	6	
Paving Equipment	1	8	
Rollers	1	7	
Worker Trips			10
Vendor Trips			2
Hauling Trips			0
Architectural Coating			
Air Compressors	1	6	
Worker Trips			5
Vendor Trips			2
Hauling Trips			0

Water Truck Vendor Trip Calculation

Amount of Water (gal/acre/day)[1]	Water Truck Capacity (gallons)[2]
10,000	4,000

Notes:

[1] Based on data provided in Guidance for Application for Dust Control Permit

Maricopa County Air Quality Department. 2005, June. Guidance for Application of Dust Control Permit. https://www.epa.gov/sites/default/files/2019-04/documents/mr_guidanceforapplicationfordustcontrolpermit.pdf)

[2] Based on standard water truck capacity:
McLellan Industries. 2025, January (access). Water Trucks. https://www.mclellanindustries.com/trucks/water-trucks/

[3] Assumes that dozers, tractors/loaders/backhoes, and graders can disturb 0.50 acres per day and scrapers can disturb 1 acre per day.

CalEEMod Inputs- Mira Costa HS Field Component, Operation

Name:	Mira Costa HS Field Component
Project Number:	MBUS-04
Project Location:	1401 Artesia Blvd, Manhattan Beach, CA 90266
County:	South Coast
Climate Zone:	8
Land Use Setting:	Urban
Gas Utility Company:	Southern California Gas
Electric Utility Company:	Southern California Edison
Air Basin:	South Coast Air Basin
Air District:	South Coast AQMD
SRA:	3 - Southwest Los Angeles County Coastal

Project Site Acreage	37
Disturbed Site Acreage	0.65

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet	Landscaped Area
Parking	Other Non-Asphalt Surfaces	28.5	1000 SQFT	0.65	NA	NA
				0.65		

Weekday Trips for AQ[1]

Land Use Type	Average Daily Trips	CalEEMod Max Daily Trip Rate	Weekend Daily Trips[2]	CalEEMod Max Daily Trip Rate
Other Non-Asphalt Surfaces	143	**5.02**	143	**5.02**

Source: DJ&A, 2025. Mira Costa High School Transportation Analysis.

Notes

[1] Project trip generation was conservatively evaluated, even though the project would only redistribute existing vehicle trips rather than generate new ones.

[2] Soccer games, Lacross practices, Youth Football:BCS, Lacross: LA Select, Soccer: Sand and Surf events are proposed to occur on weekends.

Water Use: Not modeled because the field lighting improvements would not require additional water supplies beyond what is already provided to the existing Mira Costa HS Campus.

Solid Waste: Not modeled because the field lighting improvements would not result in long-term solid waste generation.

Southern California Edison Carbon Intensity Factors[1]

Forecasted Year	2026	
CO_2:	346.20	pounds per megawatt hour
CH_4:	0.033	pound per megawatt hour
N_2O:	0.004	pound per megawatt hour

Notes:

[1] CalEEMod default values.

Changes to the CalEEMod Defaults - Fleet Mix 2026: Field Lighting

Trips 143

Default	HHD	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHD	OBUS	SBUS	UBUS
FleetMix (Model Default Percentage	0.876453985	49.93249476	4.30691205	23.61768931	2.653710544	0.672783889	2.170432545	14.18351829	0.281968806	1.091651712	0.085491902	0.0647065	0.0621874
FleetMix (Converted)	0.00876454	0.499324948	0.04306912	0.236176893	0.026537105	0.006727839	0.021704325	0.141835183	0.002819688	0.010916517	0.000854919	0.000647065	0.000621874
Trips	1	71	6	34	4	1	3	20	0	2	0	0	0
Percent		80%			6%			14%					
without buses/MH	0.008765	0.499325	0.043069	0.236177	0.026537	0.006728	0.021704	0.141835	0.000000	0.010917	0	0.000000	0
Percent		80%			5%			14%					
Adjusted without buses/MH	0.009583	0.499325	0.043069	0.236177	0.029015	0.007356	0.023731	0.141835	0.000000	0.011936	0.000000	0.000000	0.000000
Percent adjusted		80%			6%			14%					
Assumed Mix		97.0%			1.00%			2.00%					
Adjusted with Assumed Mix Percentage	0.001655	0.603695	0.052071	0.285543	0.005012	0.001271	0.028691	0.020000	0.000000	0.002062	0.000000	0.000000	0.000000
Adjusted CalEEMod Input	0.165537	60.369451	5.207149	28.554290	0.501211	0.127070	2.869110	2.000000	0.000000	0.206182	0.000000	0.000000	0.000000
Percent Check:		97%			1%			2%					
Trips	0	86	7	41	1	0	4	3	0	0	0	0	0
		139			*8*			*3*					

Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles that the regional VMT. Assumes a mix of approximately 97% passenger vehicles, 2% medium duty trucks, and 1% heavy duty trucks and buses.

CalEEMod Inputs- Mira Costa HS Facilities Master Plan Component, Operation

Name:	Mira Costa HS Facilities Master Plan Component
Project Number:	MBUS-04
Project Location:	1401 Artesia Blvd, Manhattan Beach, CA 90266
County:	South Coast
Climate Zone:	8
Land Use Setting:	Urban
Gas Utility Company:	Southern California Gas
Electric Utility Company:	Southern California Edison
Air Basin:	South Coast Air Basin
Air District:	South Coast AQMD
SRA:	3 - Southwest Los Angeles County Coastal

Project Site Acreage	37
Disturbed Site Acreage	1.66

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet	Landscaped Area
Educational	High School	64	1000 SQFT	1.46	63,600	NA
Parking	Other Non-Asphalt Surfaces	9	1000 SQFT	0.20	8,800	NA
				1.66		

Vehicle Trips: Not modeled because Facilities Master Plan would not result in an increase in capacity of students or staff on campus.

Water and Solid Waste: Not modeled because Facilities Master Plan would not result in an increase in capacity of students or staff on campus.

CalEEMod Energy Use (Default)

Land Use Subtype	Total Annual Electricity Consumption (kWh/year)	Total Annual Natural Gas Consumption (kBTU/year)	Title-24 Electricity Energy Intensity (kWhr/size/year)*	Title-24 Natural Gas Energy Intensity (KBTU/size/year)*	Nontitle-24 Electricity Energy Intensity (kWhr/size/year)	Nontitle-24 Natural Gas Energy Intensity (KBTU/size/year)
High School	397,776.39	1,334,321.06	**343,873.84**	**678,708.94**	53,902.55	655,612.12

Southern California Edison Carbon Intensity Factors[1]

Forecasted Year	2028	
CO_2:	346.20	pounds per megawatt hour
CH_4:	0.033	pound per megawatt hour
N_2O:	0.004	pound per megawatt hour
Notes:		

[1] CalEEMod default values.

Emissions Worksheet

Mira Costa HS Field Component Regional Construction Emissions Worksheet:

3.1. Site Preparation (2026) - Unmitigated	ROG	NOx	CO	SO[2]	PM10 Total	PM2.5Total
Onsite	**Summer**					
Off-Road Equipment	0.44	3.74	5.54	0.01	0.19	0.17
Dust from Material Movement	0.00	0.00	0.00	0.00	0.21	0.02
Onsite truck	0.01	0.02	0.01	0.01	0.31	0.03
Total	**0.45**	**3.76**	**5.55**	**0.02**	**0.71**	**0.22**
Offsite						
Worker	0.02	0.02	0.32	0.00	0.07	0.02
Vendor	0.01	0.24	0.12	0.01	0.06	0.02
Hauling	0.02	1.55	0.61	0.01	0.37	0.11
Total	**0.05**	**1.81**	**1.05**	**0.02**	**0.50**	**0.15**
TOTAL	***0.50***	***5.57***	***6.60***	***0.03***	***1.21***	***0.37***

3.3. Utility Trenching (2026) - Unmitigated	ROG	NOx	CO	SO[2]	PM10 Total	PM2.5Total
Onsite	**Summer**					
Off-Road Equipment	0.17	1.71	2.94	0.01	0.07	0.06
Dust From Material Movement	0.00	0.00	0.00	0.00	0.00	0.00
Onsite truck	0.01	0.02	0.01	0.01	0.15	0.02
Total	**0.18**	**1.73**	**2.95**	**0.01**	**0.22**	**0.08**
Offsite						
Worker	0.02	0.02	0.32	0.00	0.07	0.02
Vendor	0.01	0.14	0.07	0.01	0.04	0.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.16**	**0.39**	**0.01**	**0.11**	**0.03**
TOTAL	***0.20***	***1.89***	***3.34***	***0.02***	***0.33***	***0.11***

3.5. Field Lighting Installation (2026) - Unmitigated	ROG	NOx	CO	SO[2]	PM10 Total	PM2.5Total
Onsite	**Summer**					
Off-Road Equipment	0.29	2.74	3.09	0.01	0.12	0.11
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.29**	**2.74**	**3.09**	**0.01**	**0.12**	**0.11**
Offsite						
Worker	0.03	0.03	0.52	0.00	0.10	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.03**	**0.52**	**0.00**	**0.10**	**0.02**
TOTAL	***0.32***	***2.77***	***3.61***	***0.01***	***0.22***	***0.13***

3.7. Paving (2026) - Unmitigated	ROG	NOx	CO	SO[2]	PM10 Total	PM2.5Total
Onsite	**Summer**					
Off-Road Equipment	0.49	4.24	5.30	0.01	0.18	0.16
Paving	0.00	0.00	0.00	0.00	0.00	0.00
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.49**	**4.24**	**5.30**	**0.01**	**0.18**	**0.16**
Offsite						
Worker	0.06	0.07	1.13	0.00	0.23	0.05
Vendor	0.01	0.07	0.03	0.01	0.02	0.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.07**	**0.14**	**1.16**	**0.01**	**0.25**	**0.06**
TOTAL	***0.56***	***4.38***	***6.46***	***0.02***	***0.43***	***0.22***

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Site Preparation	***0***	***6***	***7***	***0***	***1***	***0***
Utility Trenching	***0***	***2***	***3***	***0***	***0***	***0***
Field Lighting Installation	***0***	***3***	***4***	***0***	***0***	***0***
Paving	***1***	***4***	***6***	***0***	***0***	***0***
MAX DAILY	**1**	**6**	**7**	**0**	**1**	**0**
Regional Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

Mira Costa HS Field Component Construction LST Worksheet:

3.1. Site Preparation (2026) - Unmitigated	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	3.74	5.54	0.19	0.17
Dust from Material Movement	0.00	0.00	0.21	0.02
Onsite truck	0.02	0.01	0.31	0.03
Total	**3.76**	**5.55**	**0.71**	**0.22**

3.3. Utility Trenching (2026) - Unmitigated	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	1.71	2.94	0.07	0.06
Dust From Material Movement	0.00	0.00	0.00	0.00
Onsite truck	0.02	0.01	0.15	0.02
Total	**1.73**	**2.95**	**0.22**	**0.08**

3.5. Field Lighting Installation (2026) - Unmitigated	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	2.74	3.09	0.12	0.11
Onsite truck	0.00	0.00	0.00	0.00
Total	**2.74**	**3.09**	**0.12**	**0.11**

3.7. Paving (2026) - Unmitigated	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	4.24	5.30	0.18	0.16
Paving	0.00	0.00	0.00	0.00
Onsite truck	0.00	0.00	0.00	0.00
Total	**4.24**	**5.30**	**0.18**	**0.16**

	NOx	CO	PM10 Total	PM2.5 Total
Site Preparation	***4***	***6***	***0.71***	***0.22***
≤ 1.00 Acre LST	***91***	***664***	***5.00***	***3.00***
Exceeds LST?	***no***	***no***	***no***	***no***
Utility Trenching	***2***	***3***	***0.22***	***0.08***
≤ 1.00 Acre LST	***91***	***664***	***5.00***	***3.00***
Exceeds LST?	***no***	***no***	***no***	***no***
Field Lighting Installation	***3***	***3***	***0.12***	***0.11***
≤ 1.00 Acre LST	***91***	***664***	***5.00***	***3.00***
Exceeds LST?	***no***	***no***	***no***	***no***
Paving	***4***	***5***	***0.18***	***0.16***
≤ 1.00 Acre LST	***91***	***664***	***5.00***	***3.00***
Exceeds LST?	***no***	***no***	***no***	***no***

Mira Costa HS Facilies Master Plan Component Regional Construction Emissions Worksheet:

3.1. Demolition (2027) - Unmitigated							
		ROG	NOx	CO	SO[2]	PM10 Total	PM2.5Total
Onsite		**Summer**					
	Off-Road Equipment	1.34	12.40	14.40	0.02	0.47	0.43
	Demolition	0.00	0.00	0.00	0.00	0.19	0.03
	Onsite truck	0.01	0.02	0.01	0.01	0.31	0.03
	Total	**1.35**	**12.42**	**14.41**	**0.03**	**0.97**	**0.49**
Offsite							
	Worker	0.04	0.04	0.75	0.00	0.16	0.04
	Vendor	0.01	0.33	0.16	0.01	0.09	0.03
	Hauling	0.01	0.24	0.09	0.01	0.06	0.02
	Total	**0.06**	**0.61**	**1.00**	**0.01**	**0.31**	**0.09**
TOTAL		***1.40***	***13.03***	***15.41***	***0.04***	***1.28***	***0.58***

3.3. Site Preparation (2027) - Unmitigated							
		ROG	NOx	CO	SO[2]	PM10 Total	PM2.5Total
Onsite		**Summer**					
	Off-Road Equipment	1.19	10.40	11.60	0.02	0.47	0.43
	Dust From Material Movement	0.00	0.00	0.00	0.00	6.26	3.00
	Onsite truck	0.01	0.02	0.01	0.01	0.44	0.04
	Total	**1.20**	**10.42**	**11.61**	**0.03**	**7.17**	**3.47**
Offsite							
	Worker	0.03	0.03	0.45	0.00	0.10	0.02
	Vendor	0.01	0.30	0.14	0.01	0.08	0.02
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.04**	**0.33**	**0.59**	**0.01**	**0.18**	**0.04**
TOTAL		***1.24***	***10.75***	***12.20***	***0.03***	***7.35***	***3.51***

3.5. Grading (2027) - Unmitigated							
		ROG	NOx	CO	SO[2]	PM10 Total	PM2.5Total
Onsite		**Summer**					
	Off-Road Equipment	1.37	12.20	13.90	0.02	0.54	0.50
	Dust From Material Movement	0.00	0.00	0.00	0.00	7.08	3.42
	Onsite truck	0.01	0.02	0.01	0.01	0.58	0.06
	Total	**1.38**	**12.22**	**13.91**	**0.03**	**8.20**	**3.98**
Offsite							
	Worker	0.04	0.03	0.60	0.00	0.13	0.03
	Vendor	0.01	0.43	0.20	0.01	0.11	0.03
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.05**	**0.46**	**0.80**	**0.01**	**0.24**	**0.06**
TOTAL		***1.43***	***12.68***	***14.71***	***0.03***	***8.44***	***4.04***

3.7. Building Construction (2027) - Unmitigated							
		ROG	NOx	CO	SO[2]	PM10 Total	PM2.5Total
Onsite		**Summer**					
	Off-Road Equipment	0.97	8.25	9.91	0.02	0.26	0.24
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.97**	**8.25**	**9.91**	**0.02**	**0.26**	**0.24**
Offsite							
	Worker	0.09	0.09	1.60	0.00	0.35	0.08
	Vendor	0.01	0.34	0.16	0.01	0.09	0.03
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.10**	**0.43**	**1.76**	**0.01**	**0.44**	**0.11**
TOTAL		***1.07***	***8.68***	***11.67***	***0.03***	***0.70***	***0.35***

3.9. Building Construction (2028) - Unmitigated							
		ROG	NOx	CO	SO[2]	PM10 Total	PM2.5Total
Onsite		**Summer**					
	Off-Road Equipment	0.93	7.89	9.88	0.02	0.23	0.21
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.93**	**7.89**	**9.88**	**0.02**	**0.23**	**0.21**
Offsite							
	Worker	0.09	0.09	1.51	0.00	0.35	0.08
	Vendor	0.01	0.33	0.16	0.01	0.09	0.03
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.10**	**0.42**	**1.67**	**0.01**	**0.44**	**0.11**

TOTAL		***1.03***	***8.31***	***11.55***	***0.03***	***0.67***	***0.32***

3.11. Paving (2028) - Unmitigated

		ROG	NOx	CO	SO [2]	PM10 Total	PM2.5Total
Onsite		**Winter**					
	Off-Road Equipment	0.34	3.17	4.56	0.01	0.12	0.11
	Paving	0.00	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.34**	**3.17**	**4.56**	**0.01**	**0.12**	**0.11**
Offsite							
	Worker	0.03	0.04	0.48	0.00	0.13	0.03
	Vendor	0.01	0.07	0.03	0.01	0.02	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.04**	**0.11**	**0.51**	**0.01**	**0.15**	**0.04**
TOTAL		***0.38***	***3.28***	***5.07***	***0.02***	***0.27***	***0.15***

3.13. Architectural Coating (2028) - Unmitigated

		ROG	NOx	CO	SO [2]	PM10 Total	PM2.5Total
Onsite		**Winter**					
	Off-Road Equipment	0.11	0.81	1.12	0.01	0.02	0.01
	Architectural Coatings	17.50	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**17.61**	**0.81**	**1.12**	**0.01**	**0.02**	**0.01**
Offsite							
	Worker	0.02	0.02	0.26	0.00	0.07	0.02
	Vendor	0.01	0.07	0.03	0.01	0.02	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.03**	**0.09**	**0.29**	**0.01**	**0.09**	**0.03**
TOTAL		***17.64***	***0.90***	***1.41***	***0.01***	***0.11***	***0.04***

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Demolition	***1***	***13***	***15***	***0***	***1***	***1***
Site Preparation	***1***	***11***	***12***	***0***	***7***	***4***
Grading	***1***	***13***	***15***	***0***	***8***	***4***
Building Construction 2027	***1***	***9***	***12***	***0***	***1***	***0***
Building Construction 2028	***1***	***8***	***12***	***0***	***1***	***0***
Building Construction, Paving, and Architectural Coating	***19***	***12***	***18***	***0***	***1***	***1***
MAX DAILY	**19**	**13**	**18**	**0**	**8**	**4**
Regional Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

Mira Costa HS Facilities Master Plan Component Construction LST Worksheet:

3.1. Demolition (2027) - Unmitigated

	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	12.40	14.40	0.47	0.43
Demolition	0.00	0.00	0.19	0.03
Onsite truck	0.02	0.01	0.31	0.03
Total	**12.42**	**14.41**	**0.97**	**0.49**

3.3. Site Preparation (2027) - Unmitigated

	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	10.40	11.60	0.47	0.43
Dust From Material Movement	0.00	0.00	6.26	3.00
Onsite truck	0.02	0.01	0.44	0.04
Total	**10.42**	**11.61**	**7.17**	**3.47**

3.5. Grading (2027) - Unmitigated

	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	12.20	13.90	0.54	0.50
Dust From Material Movement	0.00	0.00	7.08	3.42
Onsite truck	0.02	0.01	0.58	0.06
Total	**12.22**	**13.91**	**8.20**	**3.98**

3.7. Building Construction (2027) - Unmitigated

	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	8.25	9.91	0.26	0.24
Onsite truck	0.00	0.00	0.00	0.00
Total	**8.25**	**9.91**	**0.26**	**0.24**

3.9. Building Construction (2028) - Unmitigated

	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	7.89	9.88	0.23	0.21
Onsite truck	0.00	0.00	0.00	0.00
Total	**7.89**	**9.88**	**0.23**	**0.21**

3.11. Paving (2028) - Unmitigated

	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	3.17	4.56	0.12	0.11
Paving	0.00	0.00	0.00	0.00
Onsite truck	0.00	0.00	0.00	0.00
Total	**3.17**	**4.56**	**0.12**	**0.11**

3.13. Architectural Coating (2028) - Unmitigated

	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	0.81	1.12	0.02	0.01
Architectural Coatings	0.00	0.00	0.00	0.00
Onsite truck	0.00	0.00	0.00	0.00
Total	**0.81**	**1.12**	**0.02**	**0.01**

	NOx	**CO**	**PM10 Total**	**PM2.5 Total**
Demolition	***12***	***14***	***0.97***	***0.49***

	1.66 Acre LST	*117*	*864*	*30.26*	*9.76*
	Exceeds LST?	*no*	*no*	*no*	*no*
Site Preparation		*10*	*12*	*7.17*	*3.47*
	1.44 Acre LST	*109*	*797*	*28.26*	*9.15*
	Exceeds LST?	*no*	*no*	*no*	*no*
Grading		*12*	*14*	*8.20*	*3.98*
	1.66 Acre LST	*117*	*864*	*30.26*	*9.76*
	Exceeds LST?	*no*	*no*	*no*	*no*
Building Construction 2027		*8*	*10*	*0.26*	*0.24*
	≤ 1.00 Acre LST	*91*	*664*	*24.32*	*7.95*
	Exceeds LST?	*no*	*no*	*no*	*no*
Building Construction 2028		*8*	*10*	*0.23*	*0.21*
	≤ 1.00 Acre LST	*91*	*664*	*24.32*	*7.95*
	Exceeds LST?	*no*	*no*	*no*	*no*
Building Construction, Paving, and Architectural Coating		*12*	*16*	*0.37*	*0.33*
	≤ 1.00 Acre LST	*91*	*664*	*24.32*	*7.95*
	Exceeds LST?	*no*	*no*	*no*	*no*

Regional Operation Emissions Worksheet

[1] CalEEMod, Version 2022.1.

Field Lighting Improvements

Summer

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.43	0.18	3.03	0.01	0.59	0.15
Area	0.01	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.44**	**0.18**	**3.03**	**0.01**	**0.59**	**0.15**

Winter

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.43	0.20	2.87	0.01	0.59	0.15
Area	0.01	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.44**	**0.20**	**2.87**	**0.01**	**0.59**	**0.15**

Max Daily

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.43	0.20	3.03	0.01	0.59	0.15
Area	0.01	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.44**	**0.20**	**3.03**	**0.01**	**0.59**	**0.15**
Regional Thresholds (lb/day)	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

Proposed FMP

Summer

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.00	0.00	0.00	0.00	0.00	0.00
Area	1.90	0.02	2.77	0.01	0.01	0.01
Energy	0.02	0.36	0.30	0.01	0.03	0.03
Total	**1.92**	**0.38**	**3.07**	**0.01**	**0.04**	**0.04**

Winter

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.00	0.00	0.00	0.00	0.00	0.00
Area	1.44	0.00	0.00	0.00	0.00	0.00
Energy	0.02	0.36	0.30	0.01	0.03	0.03
Total	**1.46**	**0.36**	**0.30**	**0.01**	**0.03**	**0.03**

Max Daily

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.00	0.00	0.00	0.00	0.00	0.00
Area	1.90	0.02	2.77	0.01	0.01	0.01
Energy	0.02	0.36	0.30	0.01	0.03	0.03
Total	**1.92**	**0.38**	**3.07**	**0.01**	**0.04**	**0.04**

Regional Thresholds (lb/day)	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

Overall Project[1]

Summer

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.43	0.18	3.03	0.01	0.59	0.15
Area	1.91	0.02	2.77	0.01	0.01	0.01
Energy	0.02	0.36	0.30	0.01	0.03	0.03
Total	**2.36**	**0.56**	**6.10**	**0.02**	**0.63**	**0.19**

Winter

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.43	0.20	2.87	0.01	0.59	0.15
Area	1.45	0.00	0.00	0.00	0.00	0.00
Energy	0.02	0.36	0.30	0.01	0.03	0.03
Total	**1.90**	**0.56**	**3.17**	**0.02**	**0.62**	**0.18**

Max Daily

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.43	0.20	3.03	0.01	0.59	0.15
Area	1.91	0.02	2.77	0.01	0.01	0.01
Energy	0.02	0.36	0.30	0.01	0.03	0.03
Total	**2.36**	**0.56**	**6.10**	**0.02**	**0.63**	**0.19**

Regional Thresholds (lb/day)	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

Notes:

[1.] Operational emissions from both project components were added together to evaluate overall project impacts.

LST Worksheets

Construction Localized Significance Thresholds: Field Lighting Component ≤ 1.00 acre

		NOx & CO		*PM10 & PM2.5*		
SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
3	0.00	25	82	25	82	0.65

Source Receptor	**Southwest Coastal LA Coun**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25						
NOx	**91**	Tractors	0.5	0.0625			0
CO	**664**	Graders	0.5	0.0625			0
PM10	**5.00**	Dozers	0.5	0.0625			0
PM2.5	**3.00**	Scrapers	1	0.125			0
						Acres	0.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	1	91	93	107	139	218
		91	93	107	139	218
CO	1	664	785	1156	2228	7269
	1	664	785	1156	2228	7269
		664	785	1156	2228	7269
PM10	1	5	14	28	56	140
	1	5	14	28	56	140
		5	14	28	56	140
PM2.5	1	3	5	9	21	75
	1	3	5	9	21	75
		3	5	9	21	75

Southwest Coastal LA County

0.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	91	93	107	139	218
CO	664	785	1156	2228	7269
PM10	5	14	28	56	140
PM2.5	3	5	9	21	75

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Facilities Master Plan, Demolition

		NOx & CO		*PM10 & PM2.5*		
SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
3	1.66	25	82	87	285	1.66

Source Receptor	**Southwest Coastal LA Coun**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25						
NOx	**117**	Tractors	0.5	0.0625	8	3	1.5
CO	**864**	Graders	0.5	0.0625			0
PM10	**30.26**	Dozers	0.5	0.0625	8	1	0.5
PM2.5	**9.76**	Scrapers	1	0.125			0
						Acres	2.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	2	131	128	139	165	233
		117	116	128	156	228
CO	1	664	785	1156	2228	7269
	2	967	1158	1597	2783	7950
		864	1031	1447	2594	7718
PM10	1	5	14	28	56	140
	2	8	23	37	65	148
		7	20	34	62	145
PM2.5	1	3	5	9	21	75
	2	5	7	12	25	81
		4	6	11	24	79

Southwest Coastal LA County

1.66 Acres

	25	**50**	**100**	**200**	**500**
NOx	117	116	128	156	228
CO	864	1031	1447	2594	7718
PM10	7	20	34	62	145
PM2.5	4	6	11	24	79

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Facilities Master Plan, Site Preparation

		NOx & CO		*PM10 & PM2.5*		
SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
3	1.44	25	82	87	285	1.66

Source Receptor	**Southwest Coastal LA Coun**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25						
NOx	**109**	Tractors	0.5	0.0625	8	1	0.5
CO	**797**	Graders	0.5	0.0625	8	1	0.5
PM10	**28.26**	Dozers	0.5	0.0625	7	1	0.4375
PM2.5	**9.15**	Scrapers	1	0.125			0
						Acres	1.44

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	2	131	128	139	165	233
		109	108	121	150	225
CO	1	664	785	1156	2228	7269
	2	967	1158	1597	2783	7950
		797	948	1349	2471	7567
PM10	1	5	14	28	56	140
	2	8	23	37	65	148
		6	18	32	60	144
PM2.5	1	3	5	9	21	75
	2	5	7	12	25	81
		4	6	10	23	78

Southwest Coastal LA County

1.44 Acres

	25	**50**	**100**	**200**	**500**
NOx	109	108	121	150	225
CO	797	948	1349	2471	7567
PM10	6	18	32	60	144
PM2.5	4	6	10	23	78

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Facilities Master Plan, Grading

		NOx & CO		*PM10 & PM2.5*		
SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
3	1.66	25	82	87	285	1.66

Source Receptor	**Southwest Coastal LA Coun**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25						
NOx	**117**	Tractors	0.5	0.0625	7	2	0.875
CO	**864**	Graders	0.5	0.0625	8	1	0.5
PM10	**30.26**	Dozers	0.5	0.0625	8	1	0.5
PM2.5	**9.76**	Scrapers	1	0.125			0
						Acres	1.88

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	2	131	128	139	165	233
		117	116	128	156	228
CO	1	664	785	1156	2228	7269
	2	967	1158	1597	2783	7950
		864	1031	1447	2594	7718
PM10	1	5	14	28	56	140
	2	8	23	37	65	148
		7	20	34	62	145
PM2.5	1	3	5	9	21	75
	2	5	7	12	25	81
		4	6	11	24	79

Southwest Coastal LA County

1.66 Acres

	25	**50**	**100**	**200**	**500**
NOx	117	116	128	156	228
CO	864	1031	1447	2594	7718
PM10	7	20	34	62	145
PM2.5	4	6	11	24	79

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Facilities Master Plan, Building Construction

		NOx & CO		*PM10 & PM2.5*		
SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
3	0.38	25	82	87	285	1.66

Source Receptor	**Southwest Coastal LA Coun**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25						
NOx	**91**	Tractors	0.5	0.0625	6	1	0.375
CO	**664**	Graders	0.5	0.0625			0
PM10	**24.32**	Dozers	0.5	0.0625			0
PM2.5	**7.95**	Scrapers	1	0.125			0
						Acres	0.38

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	1	91	93	107	139	218
		91	93	107	139	218
CO	1	664	785	1156	2228	7269
	1	664	785	1156	2228	7269
		664	785	1156	2228	7269
PM10	1	5	14	28	56	140
	1	5	14	28	56	140
		5	14	28	56	140
PM2.5	1	3	5	9	21	75
	1	3	5	9	21	75
		3	5	9	21	75

Southwest Coastal LA County

0.38 Acres

	25	**50**	**100**	**200**	**500**
NOx	91	93	107	139	218
CO	664	785	1156	2228	7269
PM10	5	14	28	56	140
PM2.5	3	5	9	21	75

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Facilities Master Plan, Building Construction, Paving, and Architectural Coating

		NOx & CO		*PM10 & PM2.5*		
SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
3	0.38	25	82	87	285	1.66

Source Receptor	**Southwest Coastal LA Coun**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25						
NOx	**91**	Tractors	0.5	0.0625	6	1	0.375
CO	**664**	Graders	0.5	0.0625			0
PM10	**24.32**	Dozers	0.5	0.0625			0
PM2.5	**7.95**	Scrapers	1	0.125			0
						Acres	0.38

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	1	91	93	107	139	218
		91	93	107	139	218
CO	1	664	785	1156	2228	7269
	1	664	785	1156	2228	7269
		664	785	1156	2228	7269
PM10	1	5	14	28	56	140
	1	5	14	28	56	140
		5	14	28	56	140
PM2.5	1	3	5	9	21	75
	1	3	5	9	21	75
		3	5	9	21	75

Southwest Coastal LA County

0.38 Acres

	25	**50**	**100**	**200**	**500**
NOx	91	93	107	139	218
CO	664	785	1156	2228	7269
PM10	5	14	28	56	140
PM2.5	3	5	9	21	75

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

CalEEMod Model

Field Lighting Improvements

Mira Costa HS Field Component Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

3.3. Utility Trenching (2026) - Unmitigated

3.5. Field Lighting Installation (2026) - Unmitigated

3.7. Paving (2026) - Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Mira Costa HS Field Component
Construction Start Date	6/1/2026
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	20.6
Location	1401 Artesia Blvd, Manhattan Beach, CA 90266, USA
County	Los Angeles-South Coast
City	Manhattan Beach
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4565
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	28.5	1000sqft	0.65	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.66	0.56	5.57	6.61	0.02	0.21	1.00	1.20	0.19	0.18	0.37	—	2,441	2,441	0.12	0.25	3.72	2,522
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.07	0.06	0.54	0.69	< 0.005	0.02	0.02	0.05	0.02	0.01	0.03	—	160	160	0.01	< 0.005	0.04	161
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.10	0.13	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	26.6	26.6	< 0.005	< 0.005	0.01	26.7

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.66	0.56	5.57	6.61	0.02	0.21	1.00	1.20	0.19	0.18	0.37	—	2,441	2,441	0.12	0.25	3.72	2,522
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2026	0.07	0.06	0.54	0.69	< 0.005	0.02	0.02	0.05	0.02	0.01	0.03	—	160	160	0.01	< 0.005	0.04	161
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.01	0.01	0.10	0.13	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	26.6	26.6	< 0.005	< 0.005	0.01	26.7

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.47	0.44	0.18	3.03	0.01	< 0.005	0.58	0.59	< 0.005	0.15	0.15	0.00	575	575	0.03	0.02	1.95	584
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.46	0.43	0.20	2.87	0.01	< 0.005	0.58	0.59	< 0.005	0.15	0.15	0.00	547	547	0.04	0.02	0.05	554
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.46	0.43	0.20	2.92	0.01	< 0.005	0.57	0.58	< 0.005	0.15	0.15	0.00	554	554	0.03	0.02	0.84	563
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.08	0.08	0.04	0.53	< 0.005	< 0.005	0.10	0.11	< 0.005	0.03	0.03	0.00	91.8	91.8	0.01	< 0.005	0.14	93.1

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.46	0.43	0.18	3.03	0.01	< 0.005	0.58	0.59	< 0.005	0.15	0.15	—	575	575	0.03	0.02	1.95	584
Area	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.47	0.44	0.18	3.03	0.01	< 0.005	0.58	0.59	< 0.005	0.15	0.15	0.00	575	575	0.03	0.02	1.95	584
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.46	0.43	0.20	2.87	0.01	< 0.005	0.58	0.59	< 0.005	0.15	0.15	—	547	547	0.04	0.02	0.05	554
Area	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.46	0.43	0.20	2.87	0.01	< 0.005	0.58	0.59	< 0.005	0.15	0.15	0.00	547	547	0.04	0.02	0.05	554
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.46	0.42	0.20	2.92	0.01	< 0.005	0.57	0.58	< 0.005	0.15	0.15	—	554	554	0.03	0.02	0.84	563
Area	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.46	0.43	0.20	2.92	0.01	< 0.005	0.57	0.58	< 0.005	0.15	0.15	0.00	554	554	0.03	0.02	0.84	563
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.08	0.08	0.04	0.53	< 0.005	< 0.005	0.10	0.11	< 0.005	0.03	0.03	—	91.8	91.8	0.01	< 0.005	0.14	93.1
Area	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.08	0.08	0.04	0.53	< 0.005	< 0.005	0.10	0.11	< 0.005	0.03	0.03	0.00	91.8	91.8	0.01	< 0.005	0.14	93.1

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.44	3.74	5.54	0.01	0.19	—	0.19	0.17	—	0.17	—	858	858	0.03	0.01	—	861
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	4.43	4.43	< 0.005	< 0.005	0.01	4.67
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.35	2.35	< 0.005	< 0.005	—	2.36
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.39
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.32	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	67.7	67.7	< 0.005	< 0.005	0.23	68.7
Vendor	0.02	0.01	0.24	0.12	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	218	218	0.01	0.03	0.59	228
Hauling	0.09	0.02	1.55	0.61	0.01	0.02	0.35	0.37	0.02	0.10	0.11	—	1,292	1,292	0.07	0.21	2.90	1,359
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.62
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.54	3.54	< 0.005	< 0.005	< 0.005	3.72
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.10
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.62

3.3. Utility Trenching (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.71	2.94	< 0.005	0.07	—	0.07	0.06	—	0.06	—	443	443	0.02	< 0.005	—	444
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.15	0.15	< 0.005	0.02	0.02	—	3.03	3.03	< 0.005	< 0.005	< 0.005	3.21
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20	0.20	< 0.005	< 0.005	—	0.20
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.32	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	67.7	67.7	< 0.005	< 0.005	0.23	68.7
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	125	125	0.01	0.02	0.34	130
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	0.36
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Hauling	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	0.00

3.5. Field Lighting Installation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.35	0.29	2.74	3.09	0.01	0.12	—	0.12	0.11	—	0.11	—	724	724	0.03	0.01	—	726
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.47	0.53	< 0.005	0.02	—	0.02	0.02	—	0.02	—	125	125	0.01	< 0.005	—	125
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.7	20.7	< 0.005	< 0.005	—	20.8
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.52	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	108	108	< 0.005	< 0.005	0.37	110
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.0	18.0	< 0.005	< 0.005	0.03	18.2
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.98	2.98	< 0.005	< 0.005	< 0.005	3.02
Vendor	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	0.00
Hauling	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	0.00

3.7. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.24	5.30	0.01	0.18	—	0.18	0.16	—	0.16	—	823	823	0.03	0.01	—	826
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.76	6.76	< 0.005	< 0.005	—	6.79
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.12	1.12	< 0.005	< 0.005	—	1.12
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	1.13	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	237	237	0.01	0.01	0.80	241
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	62.4	62.4	< 0.005	0.01	0.17	65.2
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.87	1.87	< 0.005	< 0.005	< 0.005	1.90
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.51	0.51	< 0.005	< 0.005	< 0.005	0.54
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.31
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.09
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.46	0.43	0.18	3.03	0.01	< 0.005	0.58	0.59	< 0.005	0.15	0.15	—	575	575	0.03	0.02	1.95	584
Total	0.46	0.43	0.18	3.03	0.01	< 0.005	0.58	0.59	< 0.005	0.15	0.15	—	575	575	0.03	0.02	1.95	584
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.46	0.43	0.20	2.87	0.01	< 0.005	0.58	0.59	< 0.005	0.15	0.15	—	547	547	0.04	0.02	0.05	554
Total	0.46	0.43	0.20	2.87	0.01	< 0.005	0.58	0.59	< 0.005	0.15	0.15	—	547	547	0.04	0.02	0.05	554
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.08	0.08	0.04	0.53	< 0.005	< 0.005	0.10	0.11	< 0.005	0.03	0.03	—	91.8	91.8	0.01	< 0.005	0.14	93.1
Total	0.08	0.08	0.04	0.53	< 0.005	< 0.005	0.10	0.11	< 0.005	0.03	0.03	—	91.8	91.8	0.01	< 0.005	0.14	93.1

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
Total	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

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	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
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	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
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	6/1/2026	6/1/2026	5.00	1.00	—
Utility Trenching	Grading	6/2/2026	6/2/2026	5.00	1.00	—
Field Lighting Installation	Building Construction	6/3/2026	8/28/2026	5.00	63.0	—
Paving	Paving	8/29/2026	9/2/2026	5.00	3.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Utility Trenching	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Utility Trenching	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20

Field Lighting Installation	Cranes	Diesel	Average	1.00	4.00	367	0.29
Field Lighting Installation	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	7.00	10.2	HHDT,MHDT
Site Preparation	Hauling	19.0	20.0	HHDT
Site Preparation	Onsite truck	1.00	0.83	HHDT
Utility Trenching	—	—	—	—
Utility Trenching	Worker	5.00	18.5	LDA,LDT1,LDT2
Utility Trenching	Vendor	4.00	10.2	HHDT,MHDT
Utility Trenching	Hauling	0.00	20.0	HHDT
Utility Trenching	Onsite truck	1.00	0.41	HHDT
Field Lighting Installation	—	—	—	—
Field Lighting Installation	Worker	8.00	18.5	LDA,LDT1,LDT2
Field Lighting Installation	Vendor	0.00	10.2	HHDT,MHDT
Field Lighting Installation	Hauling	0.00	20.0	HHDT
Field Lighting Installation	Onsite truck	0.00	0.00	HHDT

Paving	—	—	—	—
Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	2.00	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	0.00	0.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	150	0.50	0.00	—
Utility Trenching	0.00	0.00	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.65

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	0.65	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	143	143	143	52,221	830	830	830	302,792

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	0.00	0.00	1,710

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Based on PD, see assumptions file for field lighting improvements and e-bike parking area
Construction: Off-Road Equipment	Based on equipment provided from previous field lighting projects.
Construction: Trips and VMT	Included water truck trips as vendor trips and calculated onsite truck trip length, see assumptions file
Operations: Vehicle Data	DJ&A, 2025. Mira Costa High School Transportation Analysis.

Operations: Fleet Mix	Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles than the regional VMT. Assumes a mix of approximately 97% passenger vehicles, 2% medium duty trucks, and 1% heavy duty trucks and buses.

CalEEMod Model

Facilities Master Plan

Mira Costa HS Facilities Master Plan Component Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

3. Construction Emissions Details

3.1. Demolition (2027) - Unmitigated

3.3. Site Preparation (2027) - Unmitigated

3.5. Grading (2027) - Unmitigated

3.7. Building Construction (2027) - Unmitigated

3.9. Building Construction (2028) - Unmitigated

3.11. Paving (2028) - Unmitigated

3.13. Architectural Coating (2028) - Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Mira Costa HS Facilities Master Plan Component
Construction Start Date	6/1/2027
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	20.6
Location	1401 Artesia Blvd, Manhattan Beach, CA 90266, USA
County	Los Angeles-South Coast
City	Manhattan Beach
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4565
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
High School	63.6	1000sqft	1.46	63,600	0.00	0.00	—	—

Other Non-Asphalt Surfaces	8.80	1000sqft	0.20	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.70	1.42	13.1	15.4	0.03	0.54	7.90	8.44	0.50	3.54	4.04	—	3,170	3,170	0.13	0.10	1.94	3,205
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	19.3	19.0	12.5	17.8	0.03	0.37	0.67	1.04	0.34	0.16	0.50	—	3,587	3,587	0.13	0.10	0.07	3,621
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.66	1.51	5.68	7.78	0.01	0.16	0.39	0.53	0.15	0.13	0.26	—	1,663	1,663	0.06	0.05	0.52	1,680
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.30	0.28	1.04	1.42	< 0.005	0.03	0.07	0.10	0.03	0.02	0.05	—	275	275	0.01	0.01	0.09	278

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.70	1.42	13.1	15.4	0.03	0.54	7.90	8.44	0.50	3.54	4.04	—	3,170	3,170	0.13	0.10	1.94	3,205
2028	1.24	1.03	8.31	11.5	0.02	0.23	0.44	0.67	0.21	0.11	0.32	—	2,461	2,461	0.09	0.07	1.78	2,486
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.29	1.07	8.73	11.4	0.02	0.26	0.44	0.70	0.24	0.11	0.35	—	2,456	2,456	0.09	0.07	0.05	2,480
2028	19.3	19.0	12.5	17.8	0.03	0.37	0.67	1.04	0.34	0.16	0.50	—	3,587	3,587	0.13	0.10	0.07	3,621
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.59	0.49	4.17	5.26	0.01	0.14	0.39	0.53	0.13	0.13	0.26	—	1,110	1,110	0.04	0.03	0.34	1,121
2028	1.66	1.51	5.68	7.78	0.01	0.16	0.30	0.46	0.15	0.07	0.22	—	1,663	1,663	0.06	0.05	0.52	1,680
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.11	0.09	0.76	0.96	< 0.005	0.03	0.07	0.10	0.02	0.02	0.05	—	184	184	0.01	0.01	0.06	186
2028	0.30	0.28	1.04	1.42	< 0.005	0.03	0.05	0.08	0.03	0.01	0.04	—	275	275	0.01	0.01	0.09	278

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.97	1.92	0.38	3.07	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	816	816	0.07	0.01	0.25	820
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.48	1.46	0.36	0.30	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	805	805	0.07	0.01	0.25	809
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	1.82	1.77	0.37	2.20	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	813	813	0.07	0.01	0.25	816
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.33	0.32	0.07	0.40	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	135	135	0.01	< 0.005	0.04	135

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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	0.00
Area	1.94	1.90	0.02	2.77	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.4	11.4	< 0.005	< 0.005	—	11.4
Energy	0.04	0.02	0.36	0.30	< 0.005	0.03	—	0.03	0.03	—	0.03	—	805	805	0.07	0.01	—	808
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25	0.25
Total	1.97	1.92	0.38	3.07	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	816	816	0.07	0.01	0.25	820
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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	0.00
Area	1.44	1.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.04	0.02	0.36	0.30	< 0.005	0.03	—	0.03	0.03	—	0.03	—	805	805	0.07	0.01	—	808
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25	0.25
Total	1.48	1.46	0.36	0.30	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	805	805	0.07	0.01	0.25	809
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	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	0.00
Area	1.78	1.75	0.02	1.89	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.79	7.79	< 0.005	< 0.005	—	7.82
Energy	0.04	0.02	0.36	0.30	< 0.005	0.03	—	0.03	0.03	—	0.03	—	805	805	0.07	0.01	—	808
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25	0.25
Total	1.82	1.77	0.37	2.20	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	813	813	0.07	0.01	0.25	816
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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	0.00
Area	0.32	0.32	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.29	1.29	< 0.005	< 0.005	—	1.29
Energy	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	133	133	0.01	< 0.005	—	134
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	0.33	0.32	0.07	0.40	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	135	135	0.01	< 0.005	0.04	135

3. Construction Emissions Details

3.1. Demolition (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.60	1.34	12.4	14.4	0.02	0.47	—	0.47	0.43	—	0.43	—	2,494	2,494	0.10	0.02	—	2,502

Demolition	—	—	—	—	—	—	0.19	0.19	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	4.35	4.35	< 0.005	< 0.005	0.01	4.58
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.23	1.42	< 0.005	0.05	—	0.05	0.04	—	0.04	—	246	246	0.01	< 0.005	—	247
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.22	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	40.7	40.7	< 0.005	< 0.005	—	40.9
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.75	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	166	166	0.01	0.01	0.52	169
Vendor	0.02	0.01	0.33	0.16	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	306	306	0.01	0.04	0.80	319
Hauling	0.01	< 0.005	0.24	0.09	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	200	200	0.01	0.03	0.43	210

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.8	15.8	< 0.005	< 0.005	0.02	16.0
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.2	30.2	< 0.005	< 0.005	0.03	31.5
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.7	19.7	< 0.005	< 0.005	0.02	20.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.61	2.61	< 0.005	< 0.005	< 0.005	2.64
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.99	4.99	< 0.005	< 0.005	0.01	5.21
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.27	3.27	< 0.005	< 0.005	< 0.005	3.43

3.3. Site Preparation (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.42	1.19	10.4	11.6	0.02	0.47	—	0.47	0.43	—	0.43	—	2,065	2,065	0.08	0.02	—	2,072
Dust From Material Movement	—	—	—	—	—	—	6.26	6.26	—	3.00	3.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.44	0.44	< 0.005	0.04	0.04	—	5.52	5.52	< 0.005	< 0.005	0.01	5.81
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.4
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.87	1.87	< 0.005	< 0.005	—	1.88
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.45	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.7	99.7	< 0.005	< 0.005	0.31	101
Vendor	0.02	0.01	0.30	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	275	275	0.01	0.04	0.72	288
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.53

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.51	1.51	< 0.005	< 0.005	< 0.005	1.57
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.25	0.25	< 0.005	< 0.005	< 0.005	0.26
Hauling	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	0.00

3.5. Grading (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	12.2	13.9	0.02	0.54	—	0.54	0.50	—	0.50	—	2,455	2,455	0.10	0.02	—	2,464
Dust From Material Movement	—	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.58	0.58	< 0.005	0.06	0.06	—	6.69	6.69	< 0.005	< 0.005	0.01	7.04
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.23	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.1	47.1	< 0.005	< 0.005	—	47.3

Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.14
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.80	7.80	< 0.005	< 0.005	—	7.82
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.60	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	133	133	0.01	< 0.005	0.41	135
Vendor	0.03	0.01	0.43	0.20	< 0.005	< 0.005	0.11	0.11	< 0.005	0.03	0.03	—	397	397	0.02	0.05	1.04	415
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.45	2.45	< 0.005	< 0.005	< 0.005	2.48
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.62	7.62	< 0.005	< 0.005	0.01	7.95
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.41

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.26	1.26	< 0.005	< 0.005	< 0.005	1.32
Hauling	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	0.00

3.7. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.17	0.97	8.25	9.91	0.02	0.26	—	0.26	0.24	—	0.24	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.17	0.97	8.25	9.91	0.02	0.26	—	0.26	0.24	—	0.24	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.29	2.44	2.93	0.01	0.08	—	0.08	0.07	—	0.07	—	532	532	0.02	< 0.005	—	534
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.06	0.05	0.45	0.53	< 0.005	0.01	—	0.01	0.01	—	0.01	—	88.1	88.1	< 0.005	< 0.005	—	88.4
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	0.09	1.60	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	355	355	0.02	0.01	1.11	360
Vendor	0.02	0.01	0.34	0.16	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	319	319	0.01	0.04	0.83	333
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	0.12	1.36	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	337	337	< 0.005	0.01	0.03	340
Vendor	0.02	0.01	0.36	0.17	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	319	319	0.01	0.04	0.02	332
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.42	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.14	102
Vendor	0.01	< 0.005	0.11	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	94.2	94.2	< 0.005	0.01	0.11	98.3
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.7	16.7	< 0.005	< 0.005	0.02	16.9
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.6	15.6	< 0.005	< 0.005	0.02	16.3
Hauling	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	0.00

3.9. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.12	0.93	7.89	9.88	0.02	0.23	—	0.23	0.21	—	0.21	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.12	0.93	7.89	9.88	0.02	0.23	—	0.23	0.21	—	0.21	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	0.61	5.19	6.49	0.01	0.15	—	0.15	0.14	—	0.14	—	1,184	1,184	0.05	0.01	—	1,188
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.95	1.19	< 0.005	0.03	—	0.03	0.03	—	0.03	—	196	196	0.01	< 0.005	—	197
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.09	0.09	1.51	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	349	349	< 0.005	0.01	0.99	353
Vendor	0.02	0.01	0.33	0.16	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	311	311	0.01	0.04	0.79	325
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.28	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	331	331	< 0.005	0.01	0.03	334
Vendor	0.02	0.01	0.34	0.16	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	311	311	0.01	0.04	0.02	325
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.88	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	221	221	< 0.005	0.01	0.28	223
Vendor	0.01	< 0.005	0.23	0.10	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	205	205	0.01	0.03	0.22	214
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.5	36.5	< 0.005	< 0.005	0.05	37.0
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.9	33.9	< 0.005	< 0.005	0.04	35.4
Hauling	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	0.00

3.11. Paving (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.40	0.34	3.17	4.56	0.01	0.12	—	0.12	0.11	—	0.11	—	701	701	0.03	0.01	—	704
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	32.7	32.7	< 0.005	< 0.005	—	32.8
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.41	5.41	< 0.005	< 0.005	—	5.43
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.48	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	124	124	< 0.005	< 0.005	0.01	125
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	59.8	59.8	< 0.005	0.01	< 0.005	62.3
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.85	5.85	< 0.005	< 0.005	0.01	5.92
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.78	2.78	< 0.005	< 0.005	< 0.005	2.91
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.97	0.97	< 0.005	< 0.005	< 0.005	0.98
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.48
Hauling	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	0.00

3.13. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	17.5	17.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.22	6.22	< 0.005	< 0.005	—	6.24

Architect Coatings	0.81	0.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.03	1.03	< 0.005	< 0.005	—	1.03
Architectural Coatings	0.15	0.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	66.1	66.1	< 0.005	< 0.005	0.01	66.9
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	59.8	59.8	< 0.005	0.01	< 0.005	62.3
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.12	3.12	< 0.005	< 0.005	< 0.005	3.16
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.78	2.78	< 0.005	< 0.005	< 0.005	2.91
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.52	0.52	< 0.005	< 0.005	< 0.005	0.52
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.48
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	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	0.00
Other Non-Asphalt Surfaces	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	0.00
Total	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	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	0.00
Other Non-Asphalt Surfaces	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	0.00
Total	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	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	0.00
Other Non-Asphalt Surfaces	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	0.00
Total	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	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	377	377	0.04	< 0.005	—	379
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	377	377	0.04	< 0.005	—	379
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	377	377	0.04	< 0.005	—	379
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	377	377	0.04	< 0.005	—	379
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	62.5	62.5	0.01	< 0.005	—	62.8
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	62.5	62.5	0.01	< 0.005	—	62.8

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.04	0.02	0.36	0.30	< 0.005	0.03	—	0.03	0.03	—	0.03	—	428	428	0.04	< 0.005	—	429
Other Non-Asphalt Surfaces	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
Total	0.04	0.02	0.36	0.30	< 0.005	0.03	—	0.03	0.03	—	0.03	—	428	428	0.04	< 0.005	—	429
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.04	0.02	0.36	0.30	< 0.005	0.03	—	0.03	0.03	—	0.03	—	428	428	0.04	< 0.005	—	429
Other Non-Asphalt Surfaces	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
Total	0.04	0.02	0.36	0.30	< 0.005	0.03	—	0.03	0.03	—	0.03	—	428	428	0.04	< 0.005	—	429
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.8	70.8	0.01	< 0.005	—	71.0
Other Non-Asphalt Surfaces	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
Total	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.8	70.8	0.01	< 0.005	—	71.0

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.36	1.36	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.08	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.49	0.45	0.02	2.77	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.4	11.4	< 0.005	< 0.005	—	11.4
Total	1.94	1.90	0.02	2.77	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.4	11.4	< 0.005	< 0.005	—	11.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.36	1.36	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.08	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.44	1.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.25	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.06	0.06	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.29	1.29	< 0.005	< 0.005	—	1.29
Total	0.32	0.32	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.29	1.29	< 0.005	< 0.005	—	1.29

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25	0.25
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25	0.25
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25	0.25
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25	0.25
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	6/1/2027	7/20/2027	5.00	36.0	—
Site Preparation	Site Preparation	7/21/2027	7/22/2027	5.00	2.00	—
Grading	Grading	7/23/2027	8/2/2027	5.00	7.00	—
Building Construction	Building Construction	8/3/2027	12/1/2028	5.00	349	—
Paving	Paving	11/9/2028	12/1/2028	5.00	17.0	—
Architectural Coating	Architectural Coating	11/9/2028	12/1/2028	5.00	17.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	7.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	6.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Demolition	—	—	—	—
Demolition	Worker	12.5	18.5	LDA,LDT1,LDT2
Demolition	Vendor	10.0	10.2	HHDT,MHDT
Demolition	Hauling	3.00	20.0	HHDT
Demolition	Onsite truck	1.00	0.83	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	9.00	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	1.00	1.19	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	13.0	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	1.00	1.55	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	26.7	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	10.4	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	0.00	0.00	HHDT
Paving	—	—	—	—
Paving	Worker	10.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	2.00	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	0.00	0.00	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	5.34	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	2.00	10.2	HHDT,MHDT

Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	0.00	0.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	95,400	31,800	528

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	483	—
Site Preparation	0.00	0.00	1.88	0.00	—
Grading	0.00	0.00	7.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.20

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction

Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
High School	0.00	0%
Other Non-Asphalt Surfaces	0.20	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2027	0.00	532	0.03	< 0.005
2028	0.00	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
High School	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	95,400	31,800	528

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
High School	397,776	346	0.0330	0.0040	1,334,321
Other Non-Asphalt Surfaces	0.00	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
High School	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)

High School	0.00	—
Other Non-Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
High School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
High School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
High School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Conservatively assume building construction, paving, and architectural coating activities overlap, see assumptions file
Construction: Trips and VMT	Included water truck trips as vendor trips and calculated onsite truck trip length, see assumptions file
Construction: Architectural Coatings	South Coast AQMD Rule 1113

Operations: Architectural Coatings	South Coast AQMD Rule 1113
Construction: Off-Road Equipment	Assume shared equipment with overlapping phases
Operations: Vehicle Data	Not modeled because Facilities Master Plan would not result in an increase in capacity of students or staff on campus.
Operations: Water and Waste Water	Not modeled because Facilities Master Plan would not result in an increase in capacity of students or staff on campus.
Operations: Solid Waste	Not modeled because Facilities Master Plan would not result in an increase in capacity of students or staff on campus.

1. Construction Health Risk Assessment

1.1 INTRODUCTION

The Manhattan Beach Unified School District (District) is replacing field lighting at the Waller Football Stadium and installing new field lighting at West Field and softball/baseball fields on Mira Costa High School campus. A new e-bike parking area is also being installed directly east of the baseball field and west of the existing fire lane. The District is also proposing various improvements identified in the Mira Costa High School Facilities Master Plan (FMP), including demolition, new construction, modernization and renovation of school buildings and swimming pool, and other site improvements. Collectively, these components are referred to as the proposed project.

The project site is bounded by Artesia Boulevard to the south, S. Peck Avenue to the east, S. Meadows Avenue to the west, and residential homes and the Manhattan Beach Unified School District building to the north. The campus is mainly surrounded by residential neighborhoods to the north, south, east, and west. The nearest offsite sensitive receptors are the residences surrounding the project site, Pennekamp Elementary School to the north, and Journey of Faith School to the west. The nearest onsite sensitive receptors are the Mira Costa students and staff on campus.

Construction associated with the field lighting improvements and new e-bike parking areas would start June 2026 and end September 2026 (68 workdays). Construction activities would include site preparation, utility trenching, field lighting installation, and paving. Construction associated with the proposed FMP would start June 2027 and end December 2028 (394 workdays). Construction activities would include demolition, site preparation, grading, building construction, paving, and architectural coating.

Guidance from the California Environmental Protection Agency (Cal/EPA), Office of Environmental Health Hazard Assessment (OEHHA), and California Air Pollution Control Officers Association (CAPCOA) recommend the completion of health risk assessments (HRA) to determine the impacts of hazardous air emissions upon sensitive receptors in the vicinity of the project. As a result, a site-specific construction HRA has been prepared for the proposed project. This HRA considers the health impact to sensitive receptors (nearby residences, high school students, elementary school students, and preschool students) of construction emissions at the project site from diesel equipment exhaust (diesel particulate matter or DPM).

1.2 METHODOLOGY AND SIGNIFICANCE THRESHOLDS

For this HRA, the South Coast Air Quality Management District (South Coast AQMD) significance thresholds were deemed to be appropriate and the thresholds that were used for this project are shown below:

- Excess cancer risk of more than 10 in a million
- Non-cancer hazard index greater than 1.0

The methodology used in this HRA is consistent with the following OEHHA guidance document:

- OEHHA. 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.* February, 2015.

Potential exposures to DPM from project construction were evaluated for off-site sensitive receptors in close proximity to the project site. Pollutant concentrations were estimated using an air dispersion model, and excess lifetime cancer risks and chronic non-cancer hazard indexes were calculated. These risks were then compared to the significance thresholds adopted for this HRA.

It should be noted that these health impacts are based on conservative (i.e., health protective) assumptions. The United States Environmental Protection Agency (USEPA, 2005) and the Office of Environmental Health Hazard Assessment (OEHHA, 2015) note that conservative assumptions used in a risk assessment are intended to ensure that the estimated risks do not underestimate the actual risks. Therefore, the estimated risks may not necessarily represent actual risks experienced by populations at or near a site. The use of conservative assumptions tends to produce upper-bound estimates of exposure and thus risk.

For residential-based receptors, the following conservative assumptions were used:

- It was assumed that maximum-exposed off-site residential receptors (both children and adults) stood outdoors and are subject to DPM at their residence for 24 hours per day, and approximately 350 construction days per year. In reality, California residents typically will spend on average 2 hours per day outdoors at their residences (USEPA, 2011). This would result in lower exposures to construction related DPM emissions and lower estimated risk values.

- The calculated risk for infants from third trimester to age 2 years is multiplied by a factor of 10 to account for early life exposure and uncertainty in child versus adult exposure impacts (OEHHA, 2015).

For school-based receptors, the following conservative assumptions were used:

- It was assumed that maximum-exposed off-site student receptors stood outdoors and are subject to DPM at the corresponding school for 8 hours per day and 180 days per year for high school, elementary, and preschool students. In reality, students are exposed to outdoor pollutant concentration levels for a portion of the day and are exposed to reduced indoor pollutant concentrations for the remaining hours. This would result in lower exposures to construction related DPM emissions and lower estimated risk values.

- The calculated risk for children from ages 2 to 16 years is multiplied by a factor of 3 to account for early life exposure and uncertainty in child versus adult exposure impacts (OEHHA, 2015).

1.3 CONSTRUCTION EMISSIONS

Construction emissions were calculated as average daily emissions in pounds per day, using the proposed construction schedules and the latest version of California Emissions Estimation Model, known as CalEEMod Version 2022.1.12 (CAPCOA, 2022). DPM emissions were based on the CalEEMod construction runs, using annual exhaust PM_{10} construction emissions presented in pounds (lbs) per day.

The average daily emission rates from construction equipment used during the proposed project were determined by dividing the annual average emissions for each construction year by the number of construction days per year for each calendar year of construction (i.e., 2026, 2027, and 2028). The off-site hauling emission rates were adjusted to evaluate localized emissions from the 0.73-mile haul route within 1,000 feet of the project site. The CalEEMod construction emissions outputs are provided in Attachment A of this HRA.

1.4 AIR DISPERSION MODELING

Air dispersion modeling was performed using the AERMOD atmospheric dispersion model (Lakes AERMOD View, version 13.0.0) to assess the impact of emitted compounds on sensitive receptors near the project. The model is a steady state Gaussian plume model and is an approved model by South Coast AQMD for estimating ground level impacts from point and fugitive sources in simple and complex terrain. The on-site construction emissions for the project were modeled as separate poly-area sources to represent the distinct areas of disturbance associated with the field lighting improvements and proposed FMP improvements. Additionally, the emissions were evaluated collectively to represent the full project area and assess cumulative air quality impacts of the entire project. The off-site haul route emissions were modeled as adjacent line volume sources. The proposed project was modeled in AERMOD to identify the annual average DPM concentration at the maximally exposed receptor (MER) of each receptor type (e.g., residential and school students).

The model requires additional input parameters, including local meteorology and terrain. AERMOD-ready meteorological (met) data was obtained from South Coast AQMD for the nearest representative meteorological station (Hawthorne Airport [KHHR]) with the five latest available years (2012 to 2016) of record to represent local weather conditions and prevailing winds. The prevailing wind direction at the KHHR meteorological station is from the southwest, and the wind rose is provided in Attachment B.

The modeling analysis also considered the spatial distribution and elevation of each emitting source in relation to the sensitive receptors. Digital elevation model data for the project site and surrounding area were obtained and included in the model runs to account for complex terrain. An emissions release height of 4.15 meters was used as representative of the stack exhaust height for off-road construction equipment and diesel truck traffic, and an initial vertical dispersion parameter of 1.93 meters was used, per CARB guidance (CARB 2000).

To determine contaminant impacts during construction hours, the model's Hour-By-Day-of-Week (HRDOW) scalar option was invoked to predict ground-level concentrations for emissions generated between the hours of 7:00 AM and 4:00 PM, with a 1-hour lunch break, Monday to Friday.

A unit emission rate of 1 gram per second was used for the construction model. The unit emission rates were proportioned over the poly-area sources for on-site construction emissions and line sources for the off-site truck routes. The maximum AERMOD concentrations from the output files were then multiplied by the emission rates calculated in Attachment A to obtain the maximum flagpole-level concentrations at the MER for each receptor type. The model output DPM concentrations from the construction emission sources are provided in Attachment A. The AERMOD model output for the emission sources is presented in Attachment B. The residential MER and the maximum exposed off-site and on-site school receptor locations are shown on Figure 1, *Project Site and Sensitive Receptor Locations*.

1.5 RISK CHARACTERIZATION

1.5.1 Carcinogenic Chemical Risk

Carcinogenic compounds are not considered to have threshold levels (i.e., dose levels below which there are no risks). Therefore, any exposure will have some associated risk. The South Coast AQMD has established a maximum incremental cancer risk of 10 in a million (1×10^{-5} or 10×10^{-6}) for California Environmental Quality Act (CEQA) projects and the OEHHA also sets a typical risk management level as 10 in a million (OEHHA, 2015).

Health risks associated with exposure to carcinogenic compounds can be defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. The cancer risk probability is determined by multiplying the chemical's annual concentration by its cancer potency factor (CPF), a measure of the carcinogenic potential of a chemical when a dose is received through the inhalation pathway. It is an upper-limit estimate of the probability of contracting cancer as a result of continuous exposure to an ambient concentration of one microgram per cubic meter ($\mu g/m^3$), averaged over a lifetime of 70 years.

Recent guidance from OEHHA recommends a refinement to the standard point estimate approach with the use of age-specific breathing rates and age sensitivity factors (ASFs) to assess risk for susceptible subpopulations such as children. For the inhalation pathway, the procedure requires the incorporation of several discrete variates to effectively quantify dose for each age group. Once determined, contaminant dose is multiplied by the cancer potency factor in units of inverse dose expressed in milligrams per kilogram per day $(mg/kg/day)^{-1}$ to derive the cancer risk estimate. Therefore, the following dose algorithm was used to accommodate the unique exposures associated with each receptor type.

$$\text{Dose}_{\text{AIR,per age group}} = \left(C_{\text{air}} \times \text{EF} \times \left[\frac{\text{BR}}{\text{BW}}\right] \times \text{A} \times \text{CF}\right)$$

Where:

Dose_{AIR}	=	dose by inhalation (mg/kg-day), per age group
C_{air}	=	concentration of contaminant in air ($\mu g/m^3$)
EF	=	exposure frequency (number of days/365 days)
BR/BW	=	daily breathing rate normalized to body weight (L/kg-day)
A	=	inhalation absorption factor (default = 1)
CF	=	conversion factor ($1x10^{-6}$, µg to mg, L to m^3)

The inhalation absorption factor (A) is a unitless factor that is only used if the cancer potency factor included a correction for absorption across the lung. The default value of 1 was used for this assessment. For residential receptors, the exposure frequency (EF) of 0.96 is used to represent 350 days per year to allow for a two-week period away from home each year (OEHHA, 2015). For students, the EF of 0.49 is used to represent 180 days per year accounting for the average annual days preschools, elementary schools, and high schools would be in-session. This timeline is considered appropriate for potential workplace exposures established by OEHHA. The daily breathing rates (BR/BW), exposure duration (ED), age sensitivity factors (ASF), and fraction of time at home (FAH) for the various age groups follow:

Field Lighting Improvements:

Age Groups	24-Hour BR/BW (L/kg-day)	ED	ASF	FAH
Third trimester	361	0.25	10	0.85
0-2 age group	1,090	0.01	10	0.85

School Age Groups	8-Hour BR/BW (L/kg-day)	ED	ASF	FAH
2–9 age group	640	0.26	3	n/a
9–16 age group	520	0.26	3	n/a

Proposed FMP:

Age Groups	24-Hour BR/BW (L/kg-day)	ED	ASF	FAH
Third trimester	361	0.25	10	0.85
0-2 age group	1,090	1.26	10	0.85

School Age Groups	8-Hour BR/BW (L/kg-day)	ED	ASF	FAH
2–9 age group	640	1.51	3	n/a
9–16 age group	520	1.51	3	n/a

For construction analysis, the exposure duration spans the length of construction (i.e., 2026 to 2028). To calculate the overall cancer risk, the risk for each appropriate age group is calculated per the following equation

$$\text{Cancer Risk}_{\text{AIR}} = \text{Dose}_{\text{AIR}} \times \text{CPF} \times \text{ASF} \times \text{FAH} \times \frac{\text{ED}}{AT}$$

Where:

Dose_{AIR}	=	dose by inhalation (mg/kg-day), per age group
CPF	=	cancer potency factor, chemical-specific $(\text{mg/kg-day})^{-1}$
ASF	=	age sensitivity factor, per age group
FAH	=	fraction of time at home, per age group (for residential receptors only)
ED	=	exposure duration (years)
AT	=	averaging time period over which exposure duration is averaged (70 years)

The final step converts the cancer risk in scientific notation to a whole number that expresses the cancer risk in "chances per million" by multiplying the cancer risk by a factor of $1x10^6$ (i.e., 1 million).

Incremental cancer risk (expressed in chances per million) was calculated for the MER of each receptor type. The assessment was based on reasonable maximum exposure, defined as the "highest exposure that is reasonably expected to occur" for each receptor type, assuming all source generated emissions concurrently.

1.5.2 Non-Carcinogenic Hazards

An evaluation was also conducted of the potential non-cancer effects of chronic DPM exposure. Adverse health effects are evaluated by comparing the annual ground-level concentration of DPM from project construction or operation with the appropriate reference exposure limit (REL). Examples of noncancer adverse health effects are asthma, chronic obstructive pulmonary disease, and local effects from chemical exposure to specific organs such as the eyes, kidneys, and reproductive system.

The hazard index approach was used to quantify noncarcinogenic impacts. The hazard index assumes that chronic subthreshold exposures adversely affect a specific organ or organ system (toxicological endpoint). For DPM, the target organ determined by OEHHA is the respiratory system. To calculate the hazard index, the DPM concentration is divided by the DPM's chronic REL. A hazard index of 1 or lower means air toxics are unlikely to cause adverse noncancer health effects, such as asthma, over a lifetime of exposure. The chronic hazard analysis for DPM is provided in Attachment A.

1.6 CONSTRUCTION HRA RESULTS

As shown in Table 1, unmitigated incremental cancer risk during the construction periods for the entire project would not exceed the South Coast AQMD threshold of 10 in one million, nor would the chronic hazard index exceed the South Coast AQMD threshold of 1.0 at any of the identified MERs.

TABLE 1. UNMITIGATED CONSTRUCTION HEALTH RISK SUMMARY

Receptor	Cancer Risk (per million)	Chronic Hazards
Field Lighting Improvements		
Residential MER	0.5	0.007
High School MER – Mira Costa High School	0.1	0.003
Elementary School MER – Pennekamp Elementary School	<0.1	<0.001
Preschool MER – Journey of Faith Preschool	<0.1	0.001
Proposed FMP		
Residential MER	1.8	0.002
High School MER – Mira Costa High School	9.2	0.119
Elementary School MER – Pennekamp Elementary School	<0.1	<0.001
Preschool MER – Journey of Faith Preschool	<0.1	0.001
Overall Project		
Residential MER	2.3	0.009
High School MER – Mira Costa High School	9.3	0.122
Elementary School MER – Pennekamp Elementary School	<0.1	<0.001
Preschool MER – Journey of Faith Preschool	<0.1	0.002
South Coast AQMD Threshold	10	1.0

Exceeds Threshold?	No	No

Note: MER = Maximally Exposed Receptor.

[1] Each MER receptor type was based on overall MER location, representing the point of maximum exposure from all source group areas, and was used for the AERMOD results and HRA.

[2] Calculated cancer risk and chronic hazards from both project components were added together to evaluate overall project impacts.

Therefore, the proposed project would not expose nearby receptors to substantial concentrations of air pollutant emissions during construction, and this impact would be less than significant.

2. References

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Source: Nearmap 2025.

Figure 1
Project Site and Receptor Locations

Attachment A. Emission and Risk Calculations

Construction Risk Assessment Emissions Worksheet: Unmitigated - Field Lighting Improvements

Total Construction Workdays:

2026	6/1/2026	9/2/2026	68	workdays
		total	68	workdays

Onsite Emissions

Tons/Year

Year	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
2026	0.01024	0.09540	0.10952	0.00023	0.00415	0.00032	0.00447	0.00382	0.00003	0.00385

Pounds/Day

Year	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
2026	0.30128	2.80596	3.22115	0.00675	0.12200	0.00950	0.13150	0.11224	0.00098	0.11322

Offsite Emissions

Tons/Year

Year	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
2026	0.00105	0.00247	0.01679	0.00001	0.00001	0.00390	0.00391	0.00001	0.00092	0.00093

Pounds/Day

Year	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
2026	0.03083	0.07257	0.49381	0.00019	0.00036	0.11470	0.11505	0.00030	0.02715	0.02746

Maximum Emissions per phase (tons/year)

3.1 Site Preparation (2026) - Unmitigated

	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
Onsite										
Off-Road Equipment	0.00021789	0.00186909	0.002772	3.963E-06	9.25317E-05		9.25317E-05	8.51292E-05		8.51292E-05
Dust From Material Movement						0.000105787	0.000105787		1.15263E-05	1.15263E-05
Onsite truck	3.18E-07	8.5792E-06	5.82E-06	2.02E-08	1.83E-08	0.000145341	0.000145359	1.83E-08	1.45288E-05	1.45471E-05
Total	**0.00022**	**0.00188**	**0.00278**	**0.00000**	**0.00009**	**0.00025**	**0.00034**	**0.00009**	**0.00003**	**0.00011**
Offsite										
Worker	9.0941E-06	1.185E-05	0.000144	0	0	3.22451E-05	3.22451E-05	0	7.55145E-06	7.55145E-06
Vendor	3.1945E-06	0.00012651	5.9E-05	7.87E-07	1.5741E-06	2.9612E-05	3.11861E-05	7.87E-07	8.19005E-06	8.9771E-06
Hauling	1.0053E-05	0.00081744	0.000307	4.3982E-06	8.37757E-06	0.000174354	0.000182732	8.37757E-06	4.77773E-05	5.61549E-05
Total	**0.00002**	**0.00096**	**0.00051**	**0.00001**	**0.00001**	**0.00024**	**0.00025**	**0.00001**	**0.00006**	**0.00007**
TOTAL	***0.00024***	***0.00283***	***0.00329***	***0.00001***	***0.00010***	***0.00049***	***0.00059***	***0.00009***	***0.00009***	***0.00018***

3.3. Utility Trenching (2026) - Unmitigated

	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
Onsite										
Off-Road Equipment	8.6014E-05	0.00085525	0.001472	2.0449E-06	3.35663E-05		3.35663E-05	3.0881E-05		3.0881E-05
Dust From Material Movement						0	0		0	0
Onsite truck	3.13E-07	7.8245E-06	5.59E-06	1.55E-08	9.04E-09	7.17949E-05	7.1804E-05	9.04E-09	7.17689E-06	7.18593E-06
Total	**0.00009**	**0.00086**	**0.00148**	**0.00000**	**0.00003**	**0.00007**	**0.00011**	**0.00003**	**0.00001**	**0.00004**
Offsite										
Worker	9.0941E-06	1.185E-05	0.000144	0	0	3.22451E-05	3.22451E-05	0	7.55145E-06	7.55145E-06
Vendor	1.8254E-06	7.2294E-05	3.37E-05	4.50E-07	8.99E-07	1.69211E-05	1.78206E-05	4.50E-07	4.68003E-06	5.12977E-06
Hauling	0	0	0	0	0	0	0	0	0	0
Total	**0.00001**	**0.00008**	**0.00018**	**0.00000**	**0.00000**	**0.00005**	**0.00005**	**0.00000**	**0.00001**	**0.00001**
TOTAL	***0.00010***	***0.00095***	***0.00166***	***0.00000***	***0.00003***	***0.00012***	***0.00016***	***0.00003***	***0.00002***	***0.00005***

3.5. Field Lighting Installation (2026) - Unmitigated

	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
Onsite										
Off-Road Equipment	0.00920261	0.08630071	0.097315	0.00021055	0.003753419		0.003753419	0.003453146		0.003453146
Onsite truck	0	0	0	0	0	0	0	0	0	0
Total	**0.00920**	**0.08630**	**0.09731**	**0.00021**	**0.00375**	**0.00000**	**0.00375**	**0.00345**	**0.00000**	**0.00345**
Offsite										
Worker	0.00091668	0.00119446	0.014536	0	0	0.003250302	0.003250302	0	0.000761186	0.000761186
Vendor	0	0	0	0	0	0	0	0	0	0
Hauling	0	0	0	0	0	0	0	0	0	0
Total	**0.00092**	**0.00119**	**0.01454**	**0.00000**	**0.00000**	**0.00325**	**0.00325**	**0.00000**	**0.00076**	**0.00076**
TOTAL	***0.01012***	***0.08750***	***0.11185***	***0.00021***	***0.00375***	***0.00325***	***0.00700***	***0.00345***	***0.00076***	***0.00421***

3.7. Paving (2026) - Unmitigated

	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
Onsite										
Off-Road Equipment	0.00073653	0.0063612	0.007949	1.2856E-05	0.0002686		0.0002686	0.000247112		0.000247112
Paving	0									
Onsite truck	0	0	0	0	0	0	0	0	0	0
Total	**0.00074**	**0.00636**	**0.00795**	**0.00001**	**0.00027**	**0.00000**	**0.00027**	**0.00025**	**0.00000**	**0.00025**
Offsite										
Worker	9.5488E-05	0.00012442	0.001514	0	0	0.000338573	0.000338573	0	7.92902E-05	7.92902E-05
Vendor	2.7381E-06	0.00010844	5.05E-05	6.75E-07	1.34923E-06	2.53817E-05	2.67309E-05	6.75E-07	7.02004E-06	7.69466E-06
Hauling	0	0	0	0	0	0	0	0	0	0
Total	**0.00010**	**0.00023**	**0.00156**	**0.00000**	**0.00000**	**0.00036**	**0.00037**	**0.00000**	**0.00009**	**0.00009**
TOTAL	***0.00083***	***0.00659***	***0.00951***	***0.00001***	***0.00027***	***0.00036***	***0.00063***	***0.00025***	***0.00009***	***0.00033***

Receptor Risk: Single Family Residence

Unmitigated Results

Receptor Information

HRA Receptor		Receptor Risk Information					
Name	Type	Start Age	Daily Breathing Rate	Fraction of Time at Home	Averaging Time	Inhalation Absorption Factor	Pollutant
Single Family Residence	Residential	3rd Trimester	24-Hour	Yes	70 Years	1	Diesel Particulate Matter

DPM Maximum Exposed Receptor (MER) UTM coordinates: 371701.28 E, 3749318.47 N.

Schedule and Duration

Activity Schedule Information							
Year	Start Date	End Date	Workday Duration	Seconds/Day	Annual Workdays	Actual Workdays	Annual Duration
2026	6/1/2026	9/2/2026	8 Hours/Day	28,800	261	68	0.26

Assumptions: Exposure Duration (ED) is derived by dividing project workdays by total annual workdays (261), assuming 5 workdays a week.

DPM Emission Rates and Concentrations

Year	Emission Rates		Concentration		Calculated Pollutant Concentration		
	On-site Emission Rate (lbs/day)	Off-site Emission Rate (lbs/day)	On-site Concentration (ug/m^3)	Off-site Concentration (ug/m^3)	On-site Concentration (ug/m3)	Off-site Concentration (ug/m^3)	Total Concentration (ug/m^3)
2026	1.22E-01	3.59E-04	1.88E+01	6.39E+00	3.62E-02	1.31E-06	3.62E-02
	Off-site Haul Distance:	0.73	miles			Maximum Annual Average Concentration:	3.62E-02
	Default Haul Distance:	20	miles			**Hazard Index:**	**0.007**

Assumptions: DPM Emissions utilize PM10 Exhaust.

Exposure Durations

Year	Age-Dependent Exposure Duration						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Total Duration
2026	0.25	0.01	0.00	0.00	0.00	0.00	0.26

Daily Breathing Rates

Year	Daily Breathing Rates by Age						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Max
2026	361	1090					1090

Receptor Risk Results

Year	Risk Per Individual By Age						Calculated Risk
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Risk/Million
2026	4.18E-07	5.32E-08					0.47
						TOTAL RISK:	**0.47**

Receptor Risk: Pennekamp Elementary School Student

Unmitigated Results

Receptor Information

HRA Receptor		Receptor Risk Information					
Name	Type	Start Age	Daily Breathing Rate	Fraction of Time at Home	Averaging Time	Inhalation Absorption Factor	Pollutant
Elementary School Receptor	Elementary School	5	8-Hour	No	70 Years	1	Diesel Particulate Matter

DPM Maximum Exposed Receptor (MER) UTM coordinates: 371524.64 E, 3749492.76 N.

Schedule and Duration

Activity Schedule Information							
Year	Start Date	End Date	Workday Duration	Seconds/Day	Annual Workdays	Actual Workdays	Annual Duration
2026	6/1/2026	9/2/2026	8 Hours/Day	28,800	261	68	0.26

Assumptions: Exposure Duration (ED) is derived by dividing project workdays by total annual workdays (261), assuming 5 workdays a week.

DPM Emission Rates and Concentrations

Year	Emission Rates		Concentration		Calculated Pollutant Concentration		
	On-site Emission Rate (lbs/day)	Off-site Emission Rate (lbs/day)	On-site Concentration (ug/m^3)	Off-site Concentration (ug/m^3)	On-site Concentration (ug/m3)	Off-site Concentration (ug/m^3)	Total Concentration (ug/m^3)
2026	1.22E-01	3.59E-04	1.13E+00	1.68E-01	2.17E-03	3.46E-08	2.17E-03
	Off-site Haul Distance:	0.73	miles			Maximum Annual Average Concentration:	2.17E-03
	Default Haul Distance:	20	miles			**Hazard Index:**	**0.000**

Assumptions: DPM Emissions utilize PM10 Exhaust.

Exposure Durations

Year	Age-Dependent Exposure Duration						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Total Duration
2026	0.00	0.00	0.26	0.00	0.00	0.00	0.26

Daily Breathing Rates

Year	Daily Breathing Rates by Age						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Max
2026			640				640

Receptor Risk Results

Year	Risk Per Individual By Age						Calculated Risk
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Risk/Million
2026			8.40E-09				0.01
						TOTAL RISK:	**0.01**

Receptor Risk: Journey of Faith School Preschool Student

Unmitigated Results

Receptor Information

HRA Receptor		Receptor Risk Information					
Name	Type	Start Age	Daily Breathing Rate	Fraction of Time at Home	Averaging Time	Inhalation Absorption Factor	Pollutant
Preschool Receptor	Preschool	2	8-Hour	No	70 Years	1	Diesel Particulate Matter

DPM Maximum Exposed Receptor (MER) UTM coordinates: 371247.41 E, 3748946.74 N.

Schedule and Duration

Activity Schedule Information							
Year	Start Date	End Date	Workday Duration	Seconds/Day	Annual Workdays	Actual Workdays	Annual Duration
2026	6/1/2026	9/2/2026	8 Hours/Day	28,800	261	68	0.26

Assumptions: Exposure Duration (ED) is derived by dividing project workdays by total annual workdays (261), assuming 5 workdays a week.

DPM Emission Rates and Concentrations

Year	Emission Rates		AERMOD Pollutant		Calculated Pollutant Concentration		
	On-site Emission Rate (lbs/day)	Off-site Emission Rate (lbs/day)	On-site Concentration (ug/m^3)	Off-site Concentration (ug/m^3)	On-site Concentration (ug/m3)	Off-site Concentration (ug/m^3)	Total Concentration (ug/m^3)
2026	1.22E-01	3.59E-04	1.32E+00	6.56E+00	2.54E-03	1.35E-06	2.54E-03
	Off-site Haul Distance:	0.73	miles			Maximum Annual Average Concentration:	2.54E-03
	Default Haul Distance:	20	miles			**Hazard Index:**	**0.001**

Assumptions: DPM Emissions utilize PM10 Exhaust.

Exposure Durations

Year	Age-Dependent Exposure Duration						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Total Duration
2026	0.00	0.00	0.26	0.00	0.00	0.00	0.26

Daily Breathing Rates

Year	Daily Breathing Rates by Age						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Max
2026			640				640

Receptor Risk Results

Year	Risk Per Individual By Age						Calculated Risk
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Risk/Million
2026			9.86E-09				0.01
						TOTAL RISK:	**0.01**

Receptor Risk: Mira Costa High School Student

Unmitigated Results

Receptor Information

HRA Receptor		Receptor Risk Information					
Name	Type	Start Age	Daily Breathing Rate	Fraction of Time at Home	Averaging Time	Inhalation Absorption Factor	Pollutant
High School Receptor	High School	14	8-Hour	No	70 Years	1	Diesel Particulate Matter

DPM Maximum Exposed Receptor (MER) UTM coordinates: 371439.22 E, 3749184.74 N.

Schedule and Duration

Activity Schedule Information							
Year	Start Date	End Date	Workday Duration	Seconds/Day	Annual Workdays	Actual Workdays	Annual Duration
2026	6/1/2026	9/2/2026	8 Hours/Day	28,800	261	68	0.26

Assumptions: Exposure Duration (ED) is derived by dividing project workdays by total annual workdays (261), assuming 5 workdays a week.

DPM Emission Rates and Concentrations

Year	Emission Rates		Concentration		Calculated Pollutant Concentration		
	On-site Emission Rate (lbs/day)	Off-site Emission Rate (lbs/day)	On-site Concentration (ug/m^3)	Off-site Concentration (ug/m^3)	On-site Concentration (ug/m3)	Off-site Concentration (ug/m^3)	Total Concentration (ug/m^3)
2026	1.22E-01	3.59E-04	8.76E+00	5.31E-01	1.68E-02	1.09E-07	1.68E-02
	Off-site Haul Distance:	0.73	miles			Maximum Annual Average Concentration:	1.68E-02
	Default Haul Distance:	20	miles			**Hazard Index:**	**0.003**

Assumptions: DPM Emissions utilize PM10 Exhaust.

Exposure Durations

Year	Age-Dependent Exposure Duration						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Total Duration
2026	0.00	0.00	0.00	0.26	0.00	0.00	0.26

Daily Breathing Rates

Year	Daily Breathing Rates by Age						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Max
2026				520			520

Receptor Risk Results

Year	Risk Per Individual By Age						Calculated Risk
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Risk/Million
2026				5.30E-08			0.05
						TOTAL RISK:	**0.05**

Construction Risk Assessment Emissions Worksheet: Unmitigated - Facilities Master Plan

Total Construction Workdays:

2027	6/1/2027	12/31/2027	154	workdays
2028	1/1/2028	12/1/2028	240	workdays
		total	394	workdays

Onsite Emissions

Tons/Year

Year	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
2027	0.08258	0.72234	0.85449	0.00158	0.02492	0.04205	0.06697	0.02292	0.01627	0.03919
2028	0.26380	0.98059	1.23336	0.00240	0.02886	0.00000	0.02886	0.02655	0.00000	0.02655

Pounds/Day

Year	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
2027	1.07252	9.38105	11.09730	0.02049	0.32362	0.54609	0.86971	0.29773	0.21126	0.50899
2028	2.19833	8.17158	10.27802	0.02002	0.24046	0.00000	0.24046	0.22122	0.00000	0.22122

Offsite Emissions

Tons/Year

Year	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
2027	0.00673	0.03930	0.10569	0.00020	0.00023	0.02976	0.02999	0.00023	0.00730	0.00752
2028	0.01214	0.05519	0.18667	0.00029	0.00029	0.05390	0.05419	0.00029	0.01308	0.01337

Pounds/Day

Year	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
2027	0.08744	0.51033	1.37257	0.00265	0.00294	0.38651	0.38946	0.00294	0.09474	0.09769
2028	0.10113	0.45992	1.55560	0.00241	0.00241	0.44914	0.45155	0.00241	0.10902	0.11143

Maximum Emissions per phase (tons/year)

3.1 Demolition (2027) - Unmitigated

	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
Onsite										
Off-Road Equipment	0.02420472	0.22378512	0.259838	0.00043066	0.00846581		0.00846581	0.007788545		0.007788545
Demolition						0.003447662	0.003447662		0.000522075	0.000522075
Onsite truck	1.1044E-05	0.00030449	0.000209	7.26E-07	6.59E-07	0.005232274	0.005232933	6.59E-07	0.000523038	0.000523696
Total	**0.02422**	**0.22409**	**0.26005**	**0.00043**	**0.00847**	**0.00868**	**0.01715**	**0.00779**	**0.00105**	**0.00883**
Offsite										
Worker	0.00078374	0.00096976	0.012034	0	0	0.002902055	0.002902055	0	0.00067963	0.00067963
Vendor	0.00016429	0.00619931	0.002855	4.0477E-05	4.04769E-05	0.001522903	0.00156338	4.04769E-05	0.000421203	0.000461679
Hauling	5.5953E-05	0.0044965	0.0017	2.5E-05	4.76198E-05	0.000991065	0.001038685	4.76198E-05	0.000271576	0.000319196
Total	**0.00100**	**0.01167**	**0.01659**	**0.00007**	**0.00009**	**0.00542**	**0.00550**	**0.00009**	**0.00137**	**0.00146**
TOTAL	***0.02522***	***0.23576***	***0.27664***	***0.00050***	***0.00855***	***0.01410***	***0.02265***	***0.00788***	***0.00242***	***0.01029***

3.3. Site Preparation (2027) - Unmitigated

	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
Onsite										
Off-Road Equipment	0.00118998	0.01043787	0.011574	1.9066E-05	0.000472751		0.000472751	0.000434931		0.000434931
Dust From Material Movement						0.006263544	0.006263544		0.003003801	0.003003801
Onsite truck	6.21E-07	1.8162E-05	1.2E-05	4.83E-08	5.25E-08	0.000416761	0.000416813	5.25E-08	4.1661E-05	4.17134E-05
Total	**0.00119**	**0.01046**	**0.01159**	**0.00002**	**0.00047**	**0.00668**	**0.00715**	**0.00043**	**0.00305**	**0.00348**
Offsite										
Worker	2.6125E-05	3.2325E-05	0.000401	0	0	9.67352E-05	9.67352E-05	0	2.26543E-05	2.26543E-05
Vendor	8.2144E-06	0.00030997	0.000143	2.0238E-06	2.02384E-06	7.61451E-05	7.8169E-05	2.02384E-06	2.10601E-05	2.3084E-05
Hauling	0	0	0	0	0	0	0	0	0	0
Total	**0.00003**	**0.00034**	**0.00054**	**0.00000**	**0.00000**	**0.00017**	**0.00017**	**0.00000**	**0.00004**	**0.00005**
TOTAL	***0.00122***	***0.01080***	***0.01213***	***0.00002***	***0.00047***	***0.00685***	***0.00733***	***0.00044***	***0.00309***	***0.00353***

3.5. Grading (2027) - Unmitigated

	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
Onsite										
Off-Road Equipment	0.00480823	0.04263461	0.048537	7.9338E-05	0.001886395		0.001886395	0.001735484		0.001735484
Dust From Material Movement						0.024789053	0.024789053		0.011986578	0.011986578
Onsite truck	2.203E-06	6.7929E-05	4.33E-05	1.97E-07	2.39E-07	0.001899939	0.001900178	2.39E-07	0.000189925	0.000190164
Total	**0.00481**	**0.04270**	**0.04858**	**0.00008**	**0.00189**	**0.02669**	**0.02858**	**0.00174**	**0.01218**	**0.01391**
Offsite										
Worker	0.00012192	0.00015085	0.001872	0	0	0.000451431	0.000451431	0	0.00010572	0.00010572
Vendor	4.1528E-05	0.00156705	0.000722	1.0232E-05	1.02317E-05	0.000384956	0.000395188	1.02317E-05	0.000106471	0.000116702
Hauling	0	0	0	0	0	0	0	0	0	0
Total	**0.00016**	**0.00172**	**0.00259**	**0.00001**	**0.00001**	**0.00084**	**0.00085**	**0.00001**	**0.00021**	**0.00022**
TOTAL	***0.00497***	***0.04442***	***0.05117***	***0.00009***	***0.00190***	***0.02753***	***0.02942***	***0.00175***	***0.01239***	***0.01413***

3.7. Building Construction (2027) - Unmitigated

	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
Onsite										
Off-Road Equipment	0.05236725	0.44509282	0.534279	0.00104738	0.014092472		0.014092472	0.012965074		0.012965074
Onsite truck	0	0	0	0	0	0	0	0	0	0
Total	**0.05237**	**0.44509**	**0.53428**	**0.00105**	**0.01409**	**0.00000**	**0.01409**	**0.01297**	**0.00000**	**0.01297**
Offsite										
Worker	0.00501784	0.00620878	0.077046	0	0	0.018580119	0.018580119	0	0.004351264	0.004351264
Vendor	0.00051309	0.01936091	0.008916	0.00012641	0.000126412	0.004756141	0.004882553	0.000126412	0.001315448	0.00144186
Hauling	0	0	0	0	0	0	0	0	0	0
Total	**0.00553**	**0.02557**	**0.08596**	**0.00013**	**0.00013**	**0.02334**	**0.02346**	**0.00013**	**0.00567**	**0.00579**
TOTAL	***0.05790***	***0.47066***	***0.62024***	***0.00117***	***0.01422***	***0.02334***	***0.03756***	***0.01309***	***0.00567***	***0.01876***

3.9. Building Construction (2028) - Unmitigated

	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
Onsite										
Off-Road Equipment	0.11137091	0.9467922	1.185117	0.00233108	0.027704214		0.027704214	0.025487877		0.025487877
Onsite truck	0	0	0	0	0	0	0	0	0	0
Total	**0.11137**	**0.94679**	**1.18512**	**0.00233**	**0.02770**	**0.00000**	**0.02770**	**0.02549**	**0.00000**	**0.02549**
Offsite										
Worker	0.01081218	0.01236687	0.160734	0	0	0.041343841	0.041343841	0	0.009682283	0.009682283
Vendor	0.00086041	0.04120047	0.018885	0.00028129	0.000281288	0.010583201	0.010864489	0.000281288	0.002927089	0.003208377
Hauling	0	0	0	0	0	0	0	0	0	0
Total	**0.01167**	**0.05357**	**0.17962**	**0.00028**	**0.00028**	**0.05193**	**0.05221**	**0.00028**	**0.01261**	**0.01289**
TOTAL	***0.12304***	***1.00036***	***1.36474***	***0.00261***	***0.02799***	***0.05193***	***0.07991***	***0.02577***	***0.01261***	***0.03838***

3.11. Paving (2028) - Unmitigated

	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
Onsite										
Off-Road Equipment	0.00285675	0.0269287	0.03874	5.7102E-05	0.00102036		0.00102036	0.000938731		0.000938731
Paving	0									
Onsite truck	0	0	0	0	0	0	0	0	0	0
Total	**0.00286**	**0.02693**	**0.03874**	**0.00006**	**0.00102**	**0.00000**	**0.00102**	**0.00094**	**0.00000**	**0.00094**

Offsite											
	Worker	0.00028671	0.00032794	0.004262	0	0	0.001096332	0.001096332	0	0.000256749	0.000256749
	Vendor	1.1693E-05	0.00055993	0.000257	3.8228E-06	3.82282E-06	0.00014383	0.000147653	3.82282E-06	3.97802E-05	4.36031E-05
	Hauling	0	0	0	0	0	0	0	0	0	0
	Total	**0.00030**	**0.00089**	**0.00452**	**0.00000**	**0.00000**	**0.00124**	**0.00124**	**0.00000**	**0.00030**	**0.00030**
TOTAL		***0.00316***	***0.02782***	***0.04326***	***0.00006***	***0.00102***	***0.00124***	***0.00226***	***0.00094***	***0.00030***	***0.00124***

3.13. Architectural Coating (2028) - Unmitigated

		ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
Onsite											
	Off-Road Equipment	0.00091214	0.0068692	0.009506	1.4671E-05	0.000130529		0.000130529	0.000120087		0.000120087
	Architectural Coating	0.1486594									
	Onsite truck	0	0	0	0	0	0	0	0	0	0
	Total	**0.14957**	**0.00687**	**0.00951**	**0.00001**	**0.00013**	**0.00000**	**0.00013**	**0.00012**	**0.00000**	**0.00012**
Offsite											
	Worker	0.00015317	0.0001752	0.002277	0	0	0.000585704	0.000585704	0	0.000137166	0.000137166
	Vendor	1.1693E-05	0.00055993	0.000257	3.8228E-06	3.82282E-06	0.00014383	0.000147653	3.82282E-06	3.97802E-05	4.36031E-05
	Hauling	0	0	0	0	0	0	0	0	0	0
	Total	**0.00016**	**0.00074**	**0.00253**	**0.00000**	**0.00000**	**0.00073**	**0.00073**	**0.00000**	**0.00018**	**0.00018**
TOTAL		***0.14974***	***0.00760***	***0.01204***	***0.00002***	***0.00013***	***0.00073***	***0.00086***	***0.00012***	***0.00018***	***0.00030***

Receptor Risk: Single Family Residence

Unmitigated Results

Receptor Information

HRA Receptor		Receptor Risk Information					
Name	Type	Start Age	Daily Breathing Rate	Fraction of Time at Home	Averaging Time	Inhalation Absorption Factor	Pollutant
Single Family Residence	Residential	3rd Trimester	24-Hour	Yes	70 Years	1	Diesel Particulate Matter

DPM Maximum Exposed Receptor (MER) UTM coordinates: 371701.28 E, 3749318.47 N.

Schedule and Duration

Activity Schedule Information							
Year	Start Date	End Date	Workday Duration	Seconds/Day	Annual Workdays	Actual Workdays	Annual Duration
2027	6/1/2027	12/31/2027	8 Hours/Day	28,800	261	154	0.59
2028	1/1/2028	12/1/2028	8 Hours/Day	28,800	261	240	0.92

Assumptions: Exposure Duration (ED) is derived by dividing project workdays by total annual workdays (261), assuming 5 workdays a week.

DPM Emission Rates and Concentrations

Year	Emission Rates		Concentration		Calculated Pollutant Concentration		
	On-site Emission Rate (lbs/day)	Off-site Emission Rate (lbs/day)	On-site Concentration (ug/m^3)	Off-site Concentration (ug/m^3)	On-site Concentration (ug/m3)	Off-site Concentration (ug/m^3)	Total Concentration (ug/m^3)
2027	3.24E-01	2.94E-03	2.23E+00	6.39E+00	1.14E-02	1.08E-05	1.14E-02
2028	2.40E-01	2.41E-03	2.23E+00	6.39E+00	8.46E-03	8.82E-06	8.47E-03
	Off-site Haul Distance:	0.73	miles			Maximum Annual Average Concentration:	1.14E-02
	Default Haul Distance:	20	miles			**Hazard Index:**	**0.002**

Assumptions: DPM Emissions utilize PM10 Exhaust.

Exposure Durations

Year	Age-Dependent Exposure Duration						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Total Duration
2027	0.25	0.34	0.00	0.00	0.00	0.00	0.59
2028	0.00	0.92	0.00	0.00	0.00	0.00	0.92

Daily Breathing Rates

Year	Daily Breathing Rates by Age						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Max
2027	361	1090					1090
2028		1090					1090

Receptor Risk Results

Year	Risk Per Individual By Age						Calculated Risk
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Risk/Million
2027	1.32E-07	5.41E-07					0.67
2028		1.09E-06					1.09
						TOTAL RISK:	**1.76**

Receptor Risk: Pennekamp Elementary School Student

Unmitigated Results

Receptor Information

HRA Receptor		Receptor Risk Information					
Name	Type	Start Age	Daily Breathing Rate	Fraction of Time at Home	Averaging Time	Inhalation Absorption Factor	Pollutant
Elementary School Receptor	Elementary School	5	8-Hour	No	70 Years	1	Diesel Particulate Matter

DPM Maximum Exposed Receptor (MER) UTM coordinates: 371524.64 E, 3749492.76 N.

Schedule and Duration

Activity Schedule Information							
Year	Start Date	End Date	Workday Duration	Seconds/Day	Annual Workdays	Actual Workdays	Annual Duration
2027	6/1/2027	12/31/2027	8 Hours/Day	28,800	261	154	0.59
2028	1/1/2028	12/1/2028	8 Hours/Day	28,800	261	240	0.92

Assumptions: Exposure Duration (ED) is derived by dividing project workdays by total annual workdays (261), assuming 5 workdays a week.

DPM Emission Rates and Concentrations

Year	Emission Rates		Concentration		Calculated Pollutant Concentration		
	On-site Emission Rate (lbs/day)	Off-site Emission Rate (lbs/day)	On-site Concentration (ug/m^3)	Off-site Concentration (ug/m^3)	On-site Concentration (ug/m3)	Off-site Concentration (ug/m^3)	Total Concentration (ug/m^3)
2027	3.24E-01	2.94E-03	4.44E-01	1.68E-01	2.26E-03	2.84E-07	2.26E-03
2028	2.40E-01	2.41E-03	4.44E-01	1.68E-01	1.68E-03	2.32E-07	1.68E-03
	Off-site Haul Distance:	0.73	miles			Maximum Annual Average Concentration:	2.26E-03
	Default Haul Distance:	20	miles			**Hazard Index:**	**0.000**

Assumptions: DPM Emissions utilize PM10 Exhaust.

Exposure Durations

Year	Age-Dependent Exposure Duration						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Total Duration
2027	0.00	0.00	0.59	0.00	0.00	0.00	0.59
2028	0.00	0.00	0.92	0.00	0.00	0.00	0.92

Daily Breathing Rates

Year	Daily Breathing Rates by Age						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Max
2027			640				640
2028			640				640

Receptor Risk Results

Year	Risk Per Individual By Age						Calculated Risk
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Risk/Million
2027			1.99E-08				0.02
2028			2.30E-08				0.02
						TOTAL RISK:	**0.04**

Receptor Risk: Journey of Faith School Preschool Student

Unmitigated Results

Receptor Information

HRA Receptor		Receptor Risk Information					
Name	Type	Start Age	Daily Breathing Rate	Fraction of Time at Home	Averaging Time	Inhalation Absorption Factor	Pollutant
Preschool Receptor	Preschool	2	8-Hour	No	70 Years	1	Diesel Particulate Matter

DPM Maximum Exposed Receptor (MER) UTM coordinates: 371247.41 E, 3748946.74 N.

Schedule and Duration

Activity Schedule Information							
Year	Start Date	End Date	Workday Duration	Seconds/Day	Annual Workdays	Actual Workdays	Annual Duration
2027	6/1/2027	12/31/2027	8 Hours/Day	28,800	261	154	0.59
2028	1/1/2028	12/1/2028	8 Hours/Day	28,800	261	240	0.92

Assumptions: Exposure Duration (ED) is derived by dividing project workdays by total annual workdays (261), assuming 5 workdays a week.

DPM Emission Rates and Concentrations

Year	Emission Rates		Concentration		Calculated Pollutant Concentration		
	On-site Emission Rate (lbs/day)	Off-site Emission Rate (lbs/day)	On-site Concentration (ug/m^3)	Off-site Concentration (ug/m^3)	On-site Concentration (ug/m3)	Off-site Concentration (ug/m^3)	Total Concentration (ug/m^3)
2027	3.24E-01	2.94E-03	8.74E-01	6.56E+00	4.45E-03	1.11E-05	4.46E-03
2028	2.40E-01	2.41E-03	8.74E-01	6.56E+00	3.31E-03	9.06E-06	3.32E-03
	Off-site Haul Distance:	0.73	miles			Maximum Annual Average Concentration:	4.46E-03
	Default Haul Distance:	20	miles			**Hazard Index:**	**0.001**

Assumptions: DPM Emissions utilize PM10 Exhaust.

Exposure Durations

Year	Age-Dependent Exposure Duration						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Total Duration
2027	0.00	0.00	0.59	0.00	0.00	0.00	0.59
2028	0.00	0.00	0.92	0.00	0.00	0.00	0.92

Daily Breathing Rates

Year	Daily Breathing Rates by Age						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Max
2027			640				640
2028			640				640

Receptor Risk Results

Year	Risk Per Individual By Age						Calculated Risk
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Risk/Million
2027			3.92E-08				0.04
2028			4.54E-08				0.05
						TOTAL RISK:	**0.08**

Receptor Risk: Mira Costa High School Student

Unmitigated Results

Receptor Information

HRA Receptor		Receptor Risk Information					
Name	Type	Start Age	Daily Breathing Rate	Fraction of Time at Home	Averaging Time	Inhalation Absorption Factor	Pollutant
High School Receptor	High School	14	8-Hour	No	70 Years	1	Diesel Particulate Matter

DPM Maximum Exposed Receptor (MER) UTM coordinates: 371439.22 E, 3749184.74 N.

Schedule and Duration

Activity Schedule Information							
Year	Start Date	End Date	Workday Duration	Seconds/Day	Annual Workdays	Actual Workdays	Annual Duration
2027	6/1/2027	12/31/2027	8 Hours/Day	28,800	261	154	0.59
2028	1/1/2028	12/1/2028	8 Hours/Day	28,800	261	240	0.92

Assumptions: Exposure Duration (ED) is derived by dividing project workdays by total annual workdays (261), assuming 5 workdays a week.

DPM Emission Rates and Concentrations

Year	Emission Rates		AERMOD Pollutant		Calculated Pollutant Concentration		
	On-site Emission Rate (lbs/day)	Off-site Emission Rate (lbs/day)	On-site Concentration (ug/m^3)	Off-site Concentration (ug/m^3)	On-site Concentration (ug/m3)	Off-site Concentration (ug/m^3)	Total Concentration (ug/m^3)
2027	3.24E-01	2.94E-03	1.17E+02	5.31E-01	5.94E-01	8.97E-07	5.94E-01
2028	2.40E-01	2.41E-03	1.17E+02	5.31E-01	4.42E-01	7.33E-07	4.42E-01
	Off-site Haul Distance:	0.73	miles			Maximum Annual Average Concentration:	5.94E-01
	Default Haul Distance:	20	miles			**Hazard Index:**	**0.119**

Assumptions: DPM Emissions utilize PM10 Exhaust.

Exposure Durations

Year	Age-Dependent Exposure Duration						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Total Duration
2027	0.00	0.00	0.00	0.59	0.00	0.00	0.59
2028	0.00	0.00	0.00	0.92	0.00	0.00	0.92

Daily Breathing Rates

Year	Daily Breathing Rates by Age						
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Max
2027				520			520
2028				520			520

Receptor Risk Results

Year	Risk Per Individual By Age						Calculated Risk
	Age Bin: 3rd Trimester>0 Years	Age Bin: 0>2 Years	Age Bin: 2>9 Years	Age Bin: 9>16 Years	Age Bin: 16>30 Years	Age Bin: 30>70+ Years	Risk/Million
2027				4.24E-06			4.24
2028				4.91E-06			4.91
						TOTAL RISK:	**9.15**

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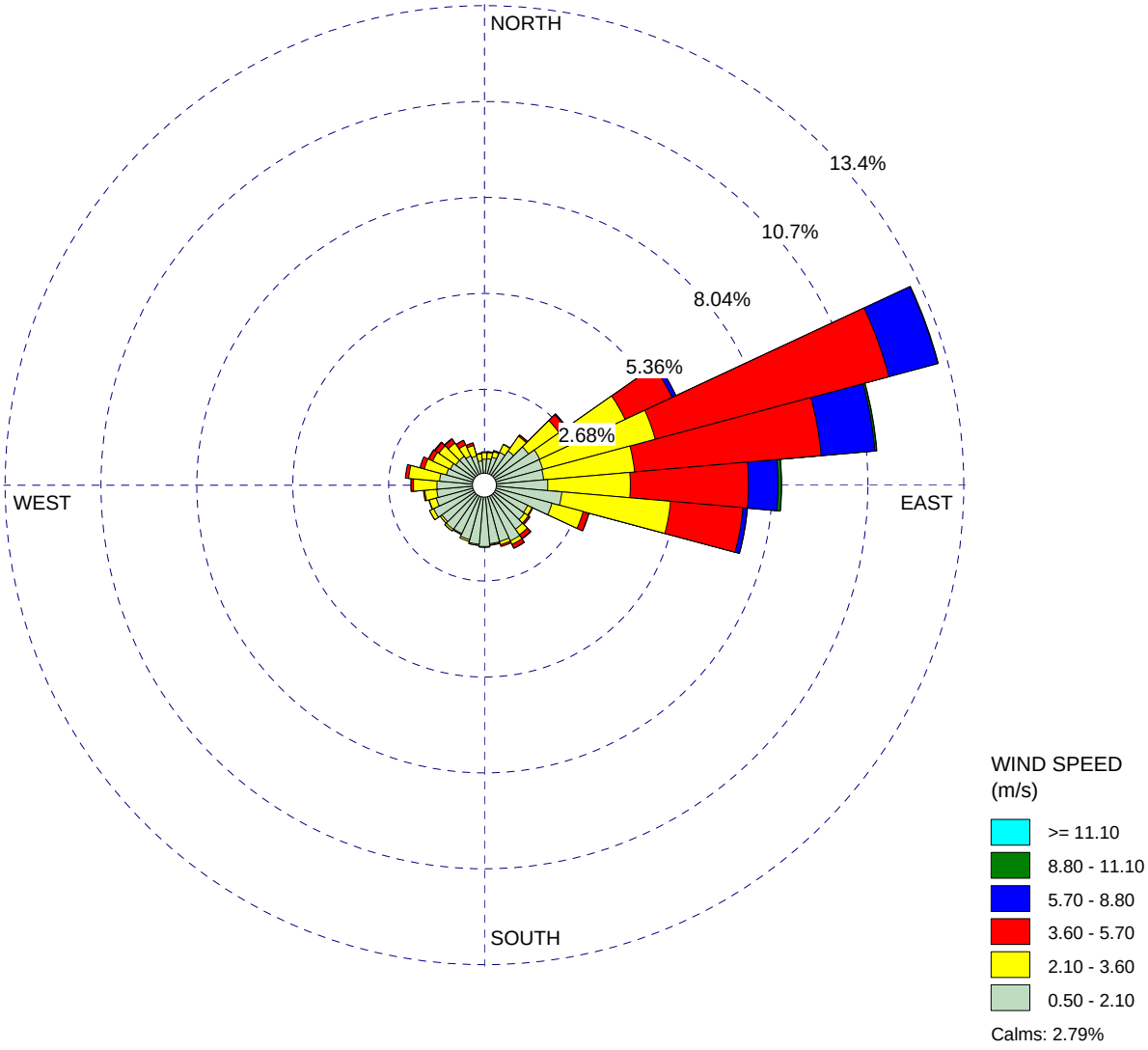
Attachment B. Air Dispersion Model Output

WIND ROSE PLOT:

Hawthorne Airport met station

DISPLAY:

Wind Speed
Flow Vector (blowing to)



COMMENTS: Hawthorne Airport met station 19 m elevation All Hours	DATA PERIOD: **Start Date: 1/1/2012 - 00:00** **End Date: 12/31/2016 - 23:59**	COMPANY NAME: **PlaceWorks**	
		MODELER: **EP**	
	CALM WINDS: **2.79%**	TOTAL COUNT: **43707 hrs.**	
	AVG. WIND SPEED: **2.48 m/s**	DATE: **8/28/2025**	PROJECT NO.: **MBUS-04**

WRPLOT View - Lakes Environmental Software

```
*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:04:59
                                                                                                               PAGE   1
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

  --  DEPOSITION LOGIC  --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
**Model Uses NO WET DEPLETION.  WETDPLT  =  F

**Model Uses URBAN Dispersion Algorithm for the SBL for    96 Source(s),
  for Total of    1 Urban Area(s):
  Urban Population =   9818605.0 ;  Urban Roughness Length =  1.000 m

**Model Allows User-Specified Options:
       1. Stack-tip Downwash.
       2. Allow FLAT/ELEV Terrain Option by Source,
          with      0 FLAT and     96 ELEV Source(s).
       3. Use Calms Processing Routine.
       4. Use Missing Data Processing Routine.
       5. No Exponential Decay.
       6. Urban Roughness Length of 1.0 Meter Used.

**Other Options Specified:
       FASTALL  - Use effective sigma-y to optimize meander for
                  POINT and VOLUME sources, and hybrid approach
                  to optimize AREA sources (formerly TOXICS option)
       ADJ_U*   - Use ADJ_U* option for SBL in AERMET
       CCVR_Sub - Meteorological data includes CCVR substitutions
       TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  OTHER

**Model Calculates PERIOD Averages Only

**This Run Includes:     96 Source(s);       4 Source Group(s); and     920 Receptor(s)

              with:       0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
               and:      92 VOLUME source(s)
               and:       4 AREA type source(s)
```

```
               and:      0 LINE source(s)
               and:      0 RLINE/RLINEXT source(s)
               and:      0 OPENPIT source(s)
               and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date:  16216

**Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    19.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.8 MB of RAM.

**Input Runstream File:          aermod.inp
**Output Print File:             aermod.out

**Detailed Error/Message File:   Mira Costa HS.err
**File for Summary of Results:   Mira Costa HS.sum
```

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000001	0	0.10870E-01	371685.8	3749323.3	46.6	4.15	5.95	3.26	YES	HRDOW
L0000002	0	0.10870E-01	371685.8	3749310.5	47.4	4.15	5.95	3.26	YES	HRDOW
L0000003	0	0.10870E-01	371685.8	3749297.7	48.4	4.15	5.95	3.26	YES	HRDOW
L0000004	0	0.10870E-01	371685.8	3749284.9	49.4	4.15	5.95	3.26	YES	HRDOW
L0000005	0	0.10870E-01	371685.8	3749272.1	50.5	4.15	5.95	3.26	YES	HRDOW
L0000006	0	0.10870E-01	371685.8	3749259.3	51.5	4.15	5.95	3.26	YES	HRDOW
L0000007	0	0.10870E-01	371685.7	3749246.5	52.5	4.15	5.95	3.26	YES	HRDOW
L0000008	0	0.10870E-01	371685.6	3749233.7	53.1	4.15	5.95	3.26	YES	HRDOW
L0000009	0	0.10870E-01	371685.6	3749220.9	53.3	4.15	5.95	3.26	YES	HRDOW
L0000010	0	0.10870E-01	371685.5	3749208.1	53.5	4.15	5.95	3.26	YES	HRDOW
L0000011	0	0.10870E-01	371685.4	3749195.3	53.0	4.15	5.95	3.26	YES	HRDOW
L0000012	0	0.10870E-01	371685.3	3749182.5	52.6	4.15	5.95	3.26	YES	HRDOW
L0000013	0	0.10870E-01	371685.2	3749169.7	52.0	4.15	5.95	3.26	YES	HRDOW
L0000014	0	0.10870E-01	371685.1	3749156.9	51.3	4.15	5.95	3.26	YES	HRDOW
L0000015	0	0.10870E-01	371685.0	3749144.1	50.6	4.15	5.95	3.26	YES	HRDOW
L0000016	0	0.10870E-01	371684.9	3749131.3	50.2	4.15	5.95	3.26	YES	HRDOW
L0000017	0	0.10870E-01	371684.8	3749118.5	49.8	4.15	5.95	3.26	YES	HRDOW
L0000018	0	0.10870E-01	371684.7	3749105.7	49.7	4.15	5.95	3.26	YES	HRDOW
L0000019	0	0.10870E-01	371684.6	3749092.9	49.5	4.15	5.95	3.26	YES	HRDOW
L0000020	0	0.10870E-01	371684.5	3749080.1	49.4	4.15	5.95	3.26	YES	HRDOW
L0000021	0	0.10870E-01	371684.4	3749067.3	49.2	4.15	5.95	3.26	YES	HRDOW
L0000022	0	0.10870E-01	371684.3	3749054.5	49.0	4.15	5.95	3.26	YES	HRDOW
L0000023	0	0.10870E-01	371684.1	3749041.7	48.6	4.15	5.95	3.26	YES	HRDOW
L0000024	0	0.10870E-01	371684.0	3749028.9	48.2	4.15	5.95	3.26	YES	HRDOW
L0000025	0	0.10870E-01	371683.8	3749016.1	47.6	4.15	5.95	3.26	YES	HRDOW
L0000026	0	0.10870E-01	371683.7	3749003.3	46.9	4.15	5.95	3.26	YES	HRDOW
L0000027	0	0.10870E-01	371683.5	3748990.5	46.2	4.15	5.95	3.26	YES	HRDOW
L0000028	0	0.10870E-01	371683.4	3748977.7	45.4	4.15	5.95	3.26	YES	HRDOW
L0000029	0	0.10870E-01	371683.2	3748964.9	44.7	4.15	5.95	3.26	YES	HRDOW
L0000030	0	0.10870E-01	371683.1	3748952.1	44.1	4.15	5.95	3.26	YES	HRDOW
L0000031	0	0.10870E-01	371682.9	3748939.3	43.6	4.15	5.95	3.26	YES	HRDOW
L0000032	0	0.10870E-01	371682.4	3748926.8	43.3	4.15	5.95	3.26	YES	HRDOW
L0000033	0	0.10870E-01	371669.6	3748926.7	42.7	4.15	5.95	3.26	YES	HRDOW
L0000034	0	0.10870E-01	371656.8	3748926.5	42.1	4.15	5.95	3.26	YES	HRDOW
L0000035	0	0.10870E-01	371644.0	3748926.3	41.3	4.15	5.95	3.26	YES	HRDOW
L0000036	0	0.10870E-01	371631.2	3748926.1	40.6	4.15	5.95	3.26	YES	HRDOW
L0000037	0	0.10870E-01	371618.4	3748925.9	40.4	4.15	5.95	3.26	YES	HRDOW

L0000038	0	0.10870E-01	371605.6	3748925.8	40.2	4.15	5.95	3.26	YES	HRDOW
L0000039	0	0.10870E-01	371592.8	3748925.6	40.2	4.15	5.95	3.26	YES	HRDOW
L0000040	0	0.10870E-01	371580.0	3748925.4	40.3	4.15	5.95	3.26	YES	HRDOW

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000041	0	0.10870E-01	371567.2	3748925.2	40.3	4.15	5.95	3.26	YES	HRDOW
L0000042	0	0.10870E-01	371554.4	3748925.1	40.4	4.15	5.95	3.26	YES	HRDOW
L0000043	0	0.10870E-01	371541.6	3748924.9	40.7	4.15	5.95	3.26	YES	HRDOW
L0000044	0	0.10870E-01	371528.8	3748924.7	41.0	4.15	5.95	3.26	YES	HRDOW
L0000045	0	0.10870E-01	371516.0	3748924.5	41.5	4.15	5.95	3.26	YES	HRDOW
L0000046	0	0.10870E-01	371503.2	3748924.3	42.1	4.15	5.95	3.26	YES	HRDOW
L0000047	0	0.10870E-01	371490.4	3748924.2	42.9	4.15	5.95	3.26	YES	HRDOW
L0000048	0	0.10870E-01	371477.6	3748924.0	43.6	4.15	5.95	3.26	YES	HRDOW
L0000049	0	0.10870E-01	371464.8	3748923.8	44.6	4.15	5.95	3.26	YES	HRDOW
L0000050	0	0.10870E-01	371452.0	3748923.7	45.5	4.15	5.95	3.26	YES	HRDOW
L0000051	0	0.10870E-01	371439.2	3748923.5	46.2	4.15	5.95	3.26	YES	HRDOW
L0000052	0	0.10870E-01	371426.4	3748923.3	47.0	4.15	5.95	3.26	YES	HRDOW
L0000053	0	0.10870E-01	371413.6	3748923.1	47.5	4.15	5.95	3.26	YES	HRDOW
L0000054	0	0.10870E-01	371400.8	3748923.0	48.1	4.15	5.95	3.26	YES	HRDOW
L0000055	0	0.10870E-01	371388.0	3748922.8	48.7	4.15	5.95	3.26	YES	HRDOW
L0000056	0	0.10870E-01	371375.2	3748922.6	49.3	4.15	5.95	3.26	YES	HRDOW
L0000057	0	0.10870E-01	371362.4	3748922.5	49.7	4.15	5.95	3.26	YES	HRDOW
L0000058	0	0.10870E-01	371349.6	3748922.3	50.2	4.15	5.95	3.26	YES	HRDOW
L0000059	0	0.10870E-01	371336.8	3748922.1	50.6	4.15	5.95	3.26	YES	HRDOW
L0000060	0	0.10870E-01	371324.0	3748922.0	51.0	4.15	5.95	3.26	YES	HRDOW
L0000061	0	0.10870E-01	371311.2	3748921.8	51.2	4.15	5.95	3.26	YES	HRDOW
L0000062	0	0.10870E-01	371298.4	3748921.6	51.5	4.15	5.95	3.26	YES	HRDOW
L0000063	0	0.10870E-01	371285.6	3748921.7	51.9	4.15	5.95	3.26	YES	HRDOW
L0000064	0	0.10870E-01	371272.8	3748921.9	52.2	4.15	5.95	3.26	YES	HRDOW
L0000065	0	0.10870E-01	371260.0	3748922.0	52.5	4.15	5.95	3.26	YES	HRDOW
L0000066	0	0.10870E-01	371247.2	3748922.2	52.8	4.15	5.95	3.26	YES	HRDOW
L0000067	0	0.10870E-01	371234.4	3748922.3	53.1	4.15	5.95	3.26	YES	HRDOW
L0000068	0	0.10870E-01	371221.6	3748922.5	53.4	4.15	5.95	3.26	YES	HRDOW
L0000069	0	0.10870E-01	371208.8	3748922.6	53.7	4.15	5.95	3.26	YES	HRDOW
L0000070	0	0.10870E-01	371196.0	3748922.8	54.1	4.15	5.95	3.26	YES	HRDOW
L0000071	0	0.10870E-01	371183.2	3748922.9	54.3	4.15	5.95	3.26	YES	HRDOW
L0000072	0	0.10870E-01	371170.4	3748923.1	54.6	4.15	5.95	3.26	YES	HRDOW
L0000073	0	0.10870E-01	371157.6	3748923.2	55.2	4.15	5.95	3.26	YES	HRDOW
L0000074	0	0.10870E-01	371144.8	3748923.4	55.8	4.15	5.95	3.26	YES	HRDOW
L0000075	0	0.10870E-01	371132.0	3748923.5	56.2	4.15	5.95	3.26	YES	HRDOW
L0000076	0	0.10870E-01	371119.2	3748923.6	56.6	4.15	5.95	3.26	YES	HRDOW
L0000077	0	0.10870E-01	371106.4	3748923.8	56.9	4.15	5.95	3.26	YES	HRDOW

L0000078	0	0.10870E-01	371093.6	3748924.2	57.2	4.15	5.95	3.26	YES	HRDOW
L0000079	0	0.10870E-01	371080.8	3748924.8	57.4	4.15	5.95	3.26	YES	HRDOW
L0000080	0	0.10870E-01	371068.0	3748925.5	57.5	4.15	5.95	3.26	YES	HRDOW

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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:04:59
                                                                                                               PAGE   4
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*
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*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000081	0	0.10870E-01	371055.2	3748926.1	57.5	4.15	5.95	3.26	YES	HRDOW
L0000082	0	0.10870E-01	371042.4	3748926.7	57.5	4.15	5.95	3.26	YES	HRDOW
L0000083	0	0.10870E-01	371029.6	3748927.3	57.4	4.15	5.95	3.26	YES	HRDOW
L0000084	0	0.10870E-01	371016.9	3748927.9	57.3	4.15	5.95	3.26	YES	HRDOW
L0000085	0	0.10870E-01	371004.1	3748928.5	57.3	4.15	5.95	3.26	YES	HRDOW
L0000086	0	0.10870E-01	370991.3	3748929.1	57.3	4.15	5.95	3.26	YES	HRDOW
L0000087	0	0.10870E-01	370978.5	3748929.7	57.0	4.15	5.95	3.26	YES	HRDOW
L0000088	0	0.10870E-01	370965.7	3748930.3	56.7	4.15	5.95	3.26	YES	HRDOW
L0000089	0	0.10870E-01	370952.9	3748931.0	56.5	4.15	5.95	3.26	YES	HRDOW
L0000090	0	0.10870E-01	370940.1	3748931.6	56.2	4.15	5.95	3.26	YES	HRDOW
L0000091	0	0.10870E-01	370927.4	3748932.2	55.9	4.15	5.95	3.26	YES	HRDOW
L0000092	0	0.10870E-01	370914.6	3748932.8	55.7	4.15	5.95	3.26	YES	HRDOW

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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:04:59
                                                                                                                PAGE   5
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*


                                        *** AREAPOLY SOURCE DATA ***

             NUMBER EMISSION RATE   LOCATION OF AREA  BASE     RELEASE  NUMBER      INIT.   URBAN  EMISSION RATE
  SOURCE      PART.  (GRAMS/SEC       X        Y      ELEV.    HEIGHT  OF VERTS.    SZ     SOURCE  SCALAR VARY
    ID        CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)            (METERS)             BY
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

1               0   0.73040E-04  371509.1 3749324.8    46.7     4.15      15         1.93     YES   HRDOW
2               0   0.31748E-04  371304.9 3749325.7    46.6     4.15      16         1.93     YES   HRDOW
3               0   0.18255E-03  371441.2 3749067.7    51.4     4.15      12         1.93     YES   HRDOW
4               0   0.50483E-03  371399.9 3749220.5    53.0     4.15       8         1.93     YES   HRDOW
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                   ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                        ***        09:04:59
                                                                                                        PAGE   6
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                                  *** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID                                          SOURCE IDs
-----------                                          ----------

 LIGHTING   1          , 2          ,

 FMP        3          , 4          ,

 HAUL       L0000001   , L0000002   , L0000003   , L0000004   , L0000005   , L0000006   , L0000007   , L0000008   ,
            L0000009   , L0000010   , L0000011   , L0000012   , L0000013   , L0000014   , L0000015   , L0000016   ,
            L0000017   , L0000018   , L0000019   , L0000020   , L0000021   , L0000022   , L0000023   , L0000024   ,
            L0000025   , L0000026   , L0000027   , L0000028   , L0000029   , L0000030   , L0000031   , L0000032   ,
            L0000033   , L0000034   , L0000035   , L0000036   , L0000037   , L0000038   , L0000039   , L0000040   ,
            L0000041   , L0000042   , L0000043   , L0000044   , L0000045   , L0000046   , L0000047   , L0000048   ,
            L0000049   , L0000050   , L0000051   , L0000052   , L0000053   , L0000054   , L0000055   , L0000056   ,
            L0000057   , L0000058   , L0000059   , L0000060   , L0000061   , L0000062   , L0000063   , L0000064   ,
            L0000065   , L0000066   , L0000067   , L0000068   , L0000069   , L0000070   , L0000071   , L0000072   ,
            L0000073   , L0000074   , L0000075   , L0000076   , L0000077   , L0000078   , L0000079   , L0000080   ,
            L0000081   , L0000082   , L0000083   , L0000084   , L0000085   , L0000086   , L0000087   , L0000088   ,
            L0000089   , L0000090   , L0000091   , L0000092   ,

 ALL        1          , L0000001   , L0000002   , L0000003   , L0000004   , L0000005   , L0000006   , L0000007   ,
            L0000008   , L0000009   , L0000010   , L0000011   , L0000012   , L0000013   , L0000014   , L0000015   ,
            L0000016   , L0000017   , L0000018   , L0000019   , L0000020   , L0000021   , L0000022   , L0000023   ,
            L0000024   , L0000025   , L0000026   , L0000027   , L0000028   , L0000029   , L0000030   , L0000031   ,
            L0000032   , L0000033   , L0000034   , L0000035   , L0000036   , L0000037   , L0000038   , L0000039   ,
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L0000040 , L0000041 , L0000042 , L0000043 , L0000044 , L0000045 , L0000046 , L0000047 ,

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
	L0000048 , L0000049 , L0000050 , L0000051 , L0000052 , L0000053 , L0000054 , L0000055 ,
	L0000056 , L0000057 , L0000058 , L0000059 , L0000060 , L0000061 , L0000062 , L0000063 ,
	L0000064 , L0000065 , L0000066 , L0000067 , L0000068 , L0000069 , L0000070 , L0000071 ,
	L0000072 , L0000073 , L0000074 , L0000075 , L0000076 , L0000077 , L0000078 , L0000079 ,
	L0000080 , L0000081 , L0000082 , L0000083 , L0000084 , L0000085 , L0000086 , L0000087 ,
	L0000088 , L0000089 , L0000090 , L0000091 , L0000092 , 2 , 3 , 4 ,

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
	9818605.	1 , L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 ,
		L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 ,
		L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 , L0000022 , L0000023 ,
		L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , L0000029 , L0000030 , L0000031 ,
		L0000032 , L0000033 , L0000034 , L0000035 , L0000036 , L0000037 , L0000038 , L0000039 ,
		L0000040 , L0000041 , L0000042 , L0000043 , L0000044 , L0000045 , L0000046 , L0000047 ,
		L0000048 , L0000049 , L0000050 , L0000051 , L0000052 , L0000053 , L0000054 , L0000055 ,
		L0000056 , L0000057 , L0000058 , L0000059 , L0000060 , L0000061 , L0000062 , L0000063 ,
		L0000064 , L0000065 , L0000066 , L0000067 , L0000068 , L0000069 , L0000070 , L0000071 ,
		L0000072 , L0000073 , L0000074 , L0000075 , L0000076 , L0000077 , L0000078 , L0000079 ,
		L0000080 , L0000081 , L0000082 , L0000083 , L0000084 , L0000085 , L0000086 , L0000087 ,
		L0000088 , L0000089 , L0000090 , L0000091 , L0000092 , 2 , 3 , 4 ,

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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:04:59
                                                                                                               PAGE   9
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = 1            ; SOURCE TYPE = AREAPOLY :
 HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .1000E+01
   9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .0000E+00   13  .1000E+01   14  .1000E+01   15  .1000E+01   16  .1000E+01
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SUNDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:04:59
                                                                                                               PAGE  10
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000001 to L0000092     ; SOURCE TYPE = VOLUME   :
 HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .1000E+01
   9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .0000E+00   13  .1000E+01   14  .1000E+01   15  .1000E+01   16  .1000E+01
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SUNDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:04:59
                                                                                                               PAGE 102
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = 2            ; SOURCE TYPE = AREAPOLY :
 HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                                DAY OF WEEK = WEEKDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .1000E+01
   9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .0000E+00   13  .1000E+01   14  .1000E+01   15  .1000E+01   16  .1000E+01
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SATURDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:04:59
                                                                                                               PAGE 103
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = 3            ; SOURCE TYPE = AREAPOLY :
 HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .1000E+01
   9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .0000E+00   13  .1000E+01   14  .1000E+01   15  .1000E+01   16  .1000E+01
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SUNDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:04:59
                                                                                                               PAGE 104
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = 4            ; SOURCE TYPE = AREAPOLY :
 HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                                DAY OF WEEK = WEEKDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .1000E+01
   9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .0000E+00   13  .1000E+01   14  .1000E+01   15  .1000E+01   16  .1000E+01
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SATURDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
```

Offsite Model Output – Unit Emission Rates (1 g/s)

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

1 1 1

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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:04:59
                                                                                                               PAGE 117
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                                *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

  Surface file:   ..\MET DATA\KHHR_v9.SFC                                              Met Version:  16216
  Profile file:   ..\MET DATA\KHHR_v9.PFL
  Surface format: FREE
  Profile format: FREE
  Surface station no.:     3167                 Upper air station no.:     3190
                Name: UNKNOWN                                 Name: UNKNOWN
                Year:   2012                                  Year:   2012

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 12 01 01   1 01 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   2.79   1.00    0.00    0.    7.9  283.8    2.0
 12 01 01   1 02   -2.1  0.068 -9.000 -9.000 -999.   43.     13.3  0.24   2.79   1.00    0.53  305.    7.9  283.1    2.0
 12 01 01   1 03   -9.0  0.127 -9.000 -9.000 -999.  109.     20.8  0.24   2.79   1.00    1.18  323.    7.9  282.5    2.0
 12 01 01   1 04   -2.2  0.068 -9.000 -9.000 -999.   43.     13.3  0.24   2.79   1.00    0.53  296.    7.9  282.0    2.0
 12 01 01   1 05 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   2.79   1.00    0.00    0.    7.9  281.4    2.0
 12 01 01   1 06   -6.0  0.103 -9.000 -9.000 -999.   80.     16.7  0.24   2.79   1.00    0.97  321.    7.9  281.4    2.0
 12 01 01   1 07   -4.3  0.088 -9.000 -9.000 -999.   63.     14.4  0.24   2.79   1.00    0.82  313.    7.9  280.4    2.0
 12 01 01   1 08   15.7 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.24   2.79   0.55    0.00    0.    7.9  281.4    2.0
 12 01 01   1 09   35.7  0.115  0.353  0.013   45.   93.     -3.8  0.24   2.79   0.32    0.63  179.    7.9  285.4    2.0
 12 01 01   1 10  109.0  0.141  0.727  0.009  128.  127.     -2.3  0.24   2.79   0.24    0.70  170.    7.9  289.2    2.0
 12 01 01   1 11  164.4  0.149  1.186  0.005  370.  138.     -1.8  0.24   2.79   0.21    0.70  222.    7.9  297.0    2.0
 12 01 01   1 12  191.7  0.163  1.525  0.005  672.  158.     -2.1  0.24   2.79   0.20    0.79   12.    7.9  299.9    2.0
 12 01 01   1 13  191.3  0.170  1.819  0.005 1144.  168.     -2.3  0.24   2.79   0.20    0.84  260.    7.9  300.9    2.0
 12 01 01   1 14  161.6  0.344  1.852  0.005 1428.  483.    -22.7  0.24   2.79   0.21    2.49  260.    7.9  298.8    2.0
 12 01 01   1 15  105.0  0.367  1.638  0.005 1521.  534.    -42.8  0.24   2.79   0.24    2.84  292.    7.9  293.8    2.0
 12 01 01   1 16   29.7  0.383  1.079  0.005 1539.  570.   -172.5  0.24   2.79   0.33    3.22  276.    7.9  290.4    2.0
 12 01 01   1 17  -24.8  0.287 -9.000 -9.000 -999.  374.     90.3  0.24   2.79   0.59    2.52  284.    7.9  289.2    2.0
 12 01 01   1 18  -26.7  0.269 -9.000 -9.000 -999.  336.     79.8  0.24   2.79   1.00    2.38  285.    7.9  287.5    2.0
 12 01 01   1 19  -10.2  0.137 -9.000 -9.000 -999.  133.     22.7  0.24   2.79   1.00    1.26  287.    7.9  287.5    2.0
 12 01 01   1 20   -6.2  0.106 -9.000 -9.000 -999.   83.     17.2  0.24   2.79   1.00    0.99  303.    7.9  287.0    2.0
 12 01 01   1 21   -7.6  0.117 -9.000 -9.000 -999.   96.     19.1  0.24   2.79   1.00    1.09  326.    7.9  286.4    2.0
 12 01 01   1 22   -6.8  0.110 -9.000 -9.000 -999.   88.     18.0  0.24   2.79   1.00    1.03  297.    7.9  285.9    2.0
 12 01 01   1 23  -19.9  0.200 -9.000 -9.000 -999.  214.     43.9  0.24   2.79   1.00    1.79  290.    7.9  285.9    2.0
 12 01 01   1 24  -19.6  0.196 -9.000 -9.000 -999.  209.     42.3  0.24   2.79   1.00    1.76  282.    7.9  285.9    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 12 01 01 01    7.9 1 -999.  -99.00   283.8   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:04:59
                                                                                                               PAGE 118
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                          *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: LIGHTING ***
                              INCLUDING SOURCE(S):     1          , 2          ,

                                   *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                  ** CONC OF OTHER    IN MICROGRAMS/M**3                      **

      X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)   Y-COORD (M)        CONC
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        371198.14    3748962.64       0.95123                    371223.14    3748962.64       1.22962
        371245.54    3748965.53       1.61003                    371247.41    3748946.74       1.32313 Preschool MER
        371148.14    3748987.64       0.70305                    371198.14    3748987.64       1.09694
        371238.73    3748977.53       1.67547                    371148.14    3749012.64       0.76732
        371203.92    3749025.94       1.41020                    371215.91    3749019.58       1.64239
        371048.14    3749037.64       0.44869                    371073.14    3749037.64       0.51113
        371098.14    3749037.64       0.59131                    371123.14    3749037.64       0.69088
        371148.14    3749037.64       0.83323                    371223.14    3749037.64       1.95606
        371048.14    3749062.64       0.47722                    371073.14    3749062.64       0.54352
        371098.14    3749062.64       0.63602                    371123.14    3749062.64       0.74935
        371148.14    3749062.64       0.90341                    371248.14    3749062.64       3.11956
        371269.96    3749061.48       4.81601                    371023.14    3749087.64       0.44217
        371048.14    3749087.64       0.50248                    371073.14    3749087.64       0.57618
        371098.14    3749087.64       0.67300                    371123.14    3749087.64       0.79718
        371148.14    3749087.64       0.97061                    371197.43    3749094.56       1.59689
        371221.01    3749094.74       2.17623                    371250.27    3749092.43       3.45258
        371023.14    3749112.64       0.45631                    371048.14    3749112.64       0.52000
        371073.14    3749112.64       0.59955                    371098.14    3749112.64       0.70154
        371123.14    3749112.64       0.83602                    371148.14    3749112.64       1.02750
        371198.14    3749112.64       1.70092                    371223.14    3749112.64       2.31444
        371248.14    3749112.64       3.42431                    371273.14    3749112.64       5.72162
        371023.14    3749137.64       0.46508                    371048.14    3749137.64       0.53165
        371073.14    3749137.64       0.61590                    371098.14    3749137.64       0.72477
        371123.14    3749137.64       0.87020                    371148.14    3749137.64       1.07373
        371198.14    3749137.64       1.75923                    371223.14    3749137.64       2.37455
        371248.14    3749137.64       3.49579                    371273.14    3749137.64       5.79696
        371023.14    3749162.64       0.46811                    371048.14    3749162.64       0.53704
        371073.14    3749162.64       0.62387                    371098.14    3749162.64       0.73848
        371123.14    3749162.64       0.89039                    371148.14    3749162.64       1.10079
        371198.14    3749162.64       1.77686                    371223.14    3749162.64       2.38423
        371248.14    3749162.64       3.50164                    371273.14    3749162.64       5.77293
        371023.14    3749187.64       0.46485                    371048.14    3749187.64       0.53399
        371073.14    3749187.64       0.61945                    371098.14    3749187.64       0.73470
        371123.14    3749187.64       0.88418                    371148.14    3749187.64       1.10043
        371198.14    3749187.64       1.76142                    371223.14    3749187.64       2.35260
        371248.14    3749187.64       3.45664                    371272.85    3749192.27       5.61905
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                  ***        10/21/25
 *** AERMET - VERSION  16216 ***   *** Construction HRA                                       ***        09:04:59
                                                                                                        PAGE 122
 *** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                          *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: LIGHTING ***
                              INCLUDING SOURCE(S):     1          , 2          ,

                                   *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                  ** CONC OF OTHER    IN MICROGRAMS/M**3                      **

      X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)   Y-COORD (M)        CONC
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        371750.72    3749414.52       3.04792                    371775.72    3749414.52       2.87174
        371800.72    3749414.52       2.68366                    371825.72    3749414.52       2.49606
        371850.72    3749414.52       2.32040                    371875.72    3749414.52       2.15176
        371300.72    3749439.52       1.05154                    371325.72    3749439.52       1.11930
        371350.72    3749439.52       1.20066                    371375.72    3749439.52       1.30497
        371400.72    3749439.52       1.42820                    371425.72    3749439.52       1.59151
        371450.72    3749439.52       1.77488                    371475.72    3749439.52       1.94980
        371553.78    3749443.85       2.16120                    371579.30    3749442.17       2.25372
        371599.53    3749444.56       2.21023                    371628.24    3749440.32       2.39602
        371750.72    3749439.52       2.14933                    371775.72    3749439.52       2.11613
        371800.72    3749439.52       2.05612                    371825.72    3749439.52       1.98036
        371850.72    3749439.52       1.89901                    371875.72    3749439.52       1.81196
        371300.72    3749464.52       0.82975                    371325.72    3749464.52       0.87209
        371350.72    3749464.52       0.93187                    371375.72    3749464.52       1.00728
        371400.72    3749464.52       1.09525                    371425.72    3749464.52       1.22021
        371450.72    3749464.52       1.34049                    371475.72    3749464.52       1.44824
        371575.72    3749464.52       1.67080                    371600.72    3749464.52       1.67915
        371625.72    3749464.52       1.65853                    371700.72    3749464.52       1.52141
        371725.72    3749464.52       1.52276                    371750.72    3749464.52       1.54391
        371775.72    3749464.52       1.56512                    371800.72    3749464.52       1.56782
        371825.72    3749464.52       1.55431                    371850.72    3749464.52       1.53072
        371875.72    3749464.52       1.49868                    371524.64    3749492.76       1.12711  Elementary School MER
        371700.72    3749489.52       1.09636                    371725.72    3749489.52       1.10522
        371750.72    3749489.52       1.13857                    371775.72    3749489.52       1.17395
        371800.72    3749489.52       1.20498                    371825.72    3749489.52       1.22697
        371850.72    3749489.52       1.23484                    371875.72    3749489.52       1.23351
        371300.72    3749514.52       0.58805                    371325.72    3749514.52       0.61273
        371350.72    3749514.52       0.64522                    371375.72    3749514.52       0.68251
        371400.72    3749514.52       0.73197                    371425.72    3749514.52       0.77594
        371450.72    3749514.52       0.81620                    371475.72    3749514.52       0.84889
        371526.15    3749506.96       0.94944                    371700.72    3749514.52       0.83141
        371725.72    3749514.52       0.83988                    371750.72    3749514.52       0.86720
        371775.72    3749514.52       0.91349                    371800.72    3749514.52       0.95150
        371825.72    3749514.52       0.98882                    371850.72    3749514.52       1.00650
        371875.72    3749514.52       1.02423                    371300.72    3749539.52       0.50643
        371325.72    3749539.52       0.52466                    371350.72    3749539.52       0.54574
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                        ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                             ***        09:04:59
                                                                                                             PAGE 126
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                          *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: LIGHTING ***
                              INCLUDING SOURCE(S):     1          , 2          ,

                                      *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                    ** CONC OF OTHER    IN MICROGRAMS/M**3                      **

      X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)   Y-COORD (M)        CONC
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        371801.28    3749268.47        3.99000                    371826.28    3749268.47        3.25606
        371851.28    3749268.47        2.72486                    371876.28    3749268.47        2.33852
        371705.54    3749284.00       17.12978                    371726.28    3749293.47       12.56435
        371751.28    3749293.47        8.53052                    371776.28    3749293.47        6.21044
        371801.28    3749293.47        4.70245                    371826.28    3749293.47        3.73871
        371851.28    3749293.47        3.09263                    371876.28    3749293.47        2.62733
        371701.28    3749318.47       18.83572 Residential MER    371726.28    3749318.47       12.42933
        371751.28    3749318.47        8.80361                    371776.28    3749318.47        6.52675
        371801.28    3749318.47        4.99361                    371826.28    3749318.47        3.98171
        371851.28    3749318.47        3.30227                    371876.28    3749318.47        2.80872
        370941.37    3748617.92        0.14085                    370966.37    3748617.92        0.14920
        370991.37    3748617.92        0.15788                    371041.37    3748617.92        0.17567
        371066.37    3748617.92        0.18496                    371091.37    3748617.92        0.19372
        371141.37    3748617.92        0.21306                    371166.37    3748617.92        0.22126
        371191.37    3748617.92        0.22855                    371216.37    3748617.92        0.23342
        371241.37    3748617.92        0.23627                    371291.37    3748617.92        0.23683
        371316.37    3748617.92        0.23452                    371341.37    3748617.92        0.23154
        371366.37    3748617.92        0.22819                    371391.37    3748617.92        0.22474
        371416.37    3748617.92        0.22121                    371441.37    3748617.92        0.21891
        371466.37    3748617.92        0.21717                    371491.37    3748617.92        0.21520
        371516.37    3748617.92        0.21389                    371541.37    3748617.92        0.20947
        371566.37    3748617.92        0.20361                    371591.37    3748617.92        0.19735
        371616.37    3748617.92        0.19092                    371641.37    3748617.92        0.18457
        371666.37    3748617.92        0.17835                    371691.37    3748617.92        0.17229
        370916.37    3748642.92        0.13803                    370941.37    3748642.92        0.14659
        371041.37    3748642.92        0.18473                    371066.37    3748642.92        0.19515
        371091.37    3748642.92        0.20485                    371141.37    3748642.92        0.22600
        371166.37    3748642.92        0.23552                    371191.37    3748642.92        0.24441
        371216.37    3748642.92        0.25043                    371241.37    3748642.92        0.25445
        371291.37    3748642.92        0.25594                    371316.37    3748642.92        0.25403
        371341.37    3748642.92        0.25100                    371366.37    3748642.92        0.24751
        371391.37    3748642.92        0.24373                    371416.37    3748642.92        0.24057
        371441.37    3748642.92        0.23912                    371466.37    3748642.92        0.23851
        371491.37    3748642.92        0.23632                    371516.37    3748642.92        0.23158
        371566.37    3748642.92        0.21804                    371591.37    3748642.92        0.21106
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                   ***        10/21/25
 *** AERMET - VERSION  16216 ***   *** Construction HRA                                        ***        09:04:59
                                                                                                        PAGE 130
 *** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                          *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: FMP      ***
                              INCLUDING SOURCE(S):     3          , 4          ,

                                   *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                  ** CONC OF OTHER    IN MICROGRAMS/M**3                      **

      X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)   Y-COORD (M)        CONC
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        371198.14    3748962.64       0.70847                    371223.14    3748962.64       0.81832
        371245.54    3748965.53       0.93841                    371247.41    3748946.74       0.87353 Preschool MER
        371148.14    3748987.64       0.58536                    371198.14    3748987.64       0.77617
        371238.73    3748977.53       0.94943                    371148.14    3749012.64       0.62603
        371203.92    3749025.94       0.92009                    371215.91    3749019.58       0.97188
        371048.14    3749037.64       0.40226                    371073.14    3749037.64       0.45061
        371098.14    3749037.64       0.50953                    371123.14    3749037.64       0.57892
        371148.14    3749037.64       0.66801                    371223.14    3749037.64       1.08751
        371048.14    3749062.64       0.42111                    371073.14    3749062.64       0.47192
        371098.14    3749062.64       0.53791                    371123.14    3749062.64       0.61529
        371148.14    3749062.64       0.71241                    371248.14    3749062.64       1.43383
        371269.96    3749061.48       1.70377                    371023.14    3749087.64       0.39168
        371048.14    3749087.64       0.43828                    371073.14    3749087.64       0.49338
        371098.14    3749087.64       0.56242                    371123.14    3749087.64       0.64687
        371148.14    3749087.64       0.75646                    371197.43    3749094.56       1.08075
        371221.01    3749094.74       1.29314                    371250.27    3749092.43       1.62918
        371023.14    3749112.64       0.40197                    371048.14    3749112.64       0.45070
        371073.14    3749112.64       0.50987                    371098.14    3749112.64       0.58283
        371123.14    3749112.64       0.67457                    371148.14    3749112.64       0.79669
        371198.14    3749112.64       1.13510                    371223.14    3749112.64       1.38273
        371248.14    3749112.64       1.71267                    371273.14    3749112.64       2.17360
        371023.14    3749137.64       0.40875                    371048.14    3749137.64       0.45990
        371073.14    3749137.64       0.52270                    371098.14    3749137.64       0.60093
        371123.14    3749137.64       0.70079                    371148.14    3749137.64       0.82997
        371198.14    3749137.64       1.19595                    371223.14    3749137.64       1.47101
        371248.14    3749137.64       1.84870                    371273.14    3749137.64       2.39619
        371023.14    3749162.64       0.41232                    371048.14    3749162.64       0.46568
        371073.14    3749162.64       0.53098                    371098.14    3749162.64       0.61382
        371123.14    3749162.64       0.71981                    371148.14    3749162.64       0.85452
        371198.14    3749162.64       1.24438                    371223.14    3749162.64       1.54452
        371248.14    3749162.64       1.96681                    371273.14    3749162.64       2.60068
        371023.14    3749187.64       0.41036                    371048.14    3749187.64       0.46454
        371073.14    3749187.64       0.53026                    371098.14    3749187.64       0.61664
        371123.14    3749187.64       0.72366                    371148.14    3749187.64       0.86645
        371198.14    3749187.64       1.27170                    371223.14    3749187.64       1.58885
        371248.14    3749187.64       2.04050                    371272.85    3749192.27       2.73320
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                   ***        10/21/25
 *** AERMET - VERSION  16216 ***   *** Construction HRA                                        ***        09:04:59
                                                                                                        PAGE 134
 *** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                           *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: FMP      ***
                               INCLUDING SOURCE(S):     3          , 4          ,

                                    *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                  ** CONC OF OTHER    IN MICROGRAMS/M**3                      **

      X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)   Y-COORD (M)        CONC
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        371750.72    3749414.52       0.95991                    371775.72    3749414.52       0.92791
        371800.72    3749414.52       0.90002                    371825.72    3749414.52       0.87821
        371850.72    3749414.52       0.86321                    371875.72    3749414.52       0.85244
        371300.72    3749439.52       0.68852                    371325.72    3749439.52       0.71604
        371350.72    3749439.52       0.73269                    371375.72    3749439.52       0.73726
        371400.72    3749439.52       0.73085                    371425.72    3749439.52       0.71734
        371450.72    3749439.52       0.70193                    371475.72    3749439.52       0.68639
        371553.78    3749443.85       0.65059                    371579.30    3749442.17       0.67371
        371599.53    3749444.56       0.67415                    371628.24    3749440.32       0.72863
        371750.72    3749439.52       0.77058                    371775.72    3749439.52       0.76180
        371800.72    3749439.52       0.75111                    371825.72    3749439.52       0.74128
        371850.72    3749439.52       0.73571                    371875.72    3749439.52       0.73361
        371300.72    3749464.52       0.56982                    371325.72    3749464.52       0.58585
        371350.72    3749464.52       0.60150                    371375.72    3749464.52       0.60449
        371400.72    3749464.52       0.59936                    371425.72    3749464.52       0.58917
        371450.72    3749464.52       0.57664                    371475.72    3749464.52       0.56396
        371575.72    3749464.52       0.55102                    371600.72    3749464.52       0.56120
        371625.72    3749464.52       0.57489                    371700.72    3749464.52       0.61325
        371725.72    3749464.52       0.61271                    371750.72    3749464.52       0.61748
        371775.72    3749464.52       0.62371                    371800.72    3749464.52       0.62555
        371825.72    3749464.52       0.62563                    371850.72    3749464.52       0.62810
        371875.72    3749464.52       0.63042                    371524.64    3749492.76       0.44377  Elementary School MER
        371700.72    3749489.52       0.48074                    371725.72    3749489.52       0.48444
        371750.72    3749489.52       0.49802                    371775.72    3749489.52       0.51165
        371800.72    3749489.52       0.52471                    371825.72    3749489.52       0.53024
        371850.72    3749489.52       0.53387                    371875.72    3749489.52       0.53458
        371300.72    3749514.52       0.41303                    371325.72    3749514.52       0.41877
        371350.72    3749514.52       0.42554                    371375.72    3749514.52       0.42653
        371400.72    3749514.52       0.42239                    371425.72    3749514.52       0.41510
        371450.72    3749514.52       0.40646                    371475.72    3749514.52       0.39743
        371526.15    3749506.96       0.40179                    371700.72    3749514.52       0.39006
        371725.72    3749514.52       0.39529                    371750.72    3749514.52       0.40871
        371775.72    3749514.52       0.42804                    371800.72    3749514.52       0.43686
        371825.72    3749514.52       0.44320                    371850.72    3749514.52       0.44802
        371875.72    3749514.52       0.45144                    371300.72    3749539.52       0.35843
        371325.72    3749539.52       0.36137                    371350.72    3749539.52       0.36325
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:04:59
                                                                                                               PAGE 138
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                          *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: FMP      ***
                              INCLUDING SOURCE(S):     3          , 4          ,

                                      *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                   ** CONC OF OTHER    IN MICROGRAMS/M**3                        **

      X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)   Y-COORD (M)        CONC
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        371801.28    3749268.47        2.28922                    371826.28    3749268.47        2.11127
        371851.28    3749268.47        1.95297                    371876.28    3749268.47        1.81455
        371705.54    3749284.00        2.93660                    371726.28    3749293.47        2.57233
        371751.28    3749293.47        2.37660                    371776.28    3749293.47        2.17242
        371801.28    3749293.47        1.99292                    371826.28    3749293.47        1.84528
        371851.28    3749293.47        1.72697                    371876.28    3749293.47        1.62465
        371701.28    3749318.47        2.33630 Residential MER    371726.28    3749318.47        2.17303
        371751.28    3749318.47        2.02635                    371776.28    3749318.47        1.86839
        371801.28    3749318.47        1.72427                    371826.28    3749318.47        1.60657
        371851.28    3749318.47        1.51767                    371876.28    3749318.47        1.44367
        370941.37    3748617.92        0.13990                    370966.37    3748617.92        0.14868
        370991.37    3748617.92        0.15802                    371041.37    3748617.92        0.17786
        371066.37    3748617.92        0.18907                    371091.37    3748617.92        0.20059
        371141.37    3748617.92        0.22385                    371166.37    3748617.92        0.23410
        371191.37    3748617.92        0.24280                    371216.37    3748617.92        0.25973
        371241.37    3748617.92        0.27238                    371291.37    3748617.92        0.29541
        371316.37    3748617.92        0.30437                    371341.37    3748617.92        0.31122
        371366.37    3748617.92        0.31561                    371391.37    3748617.92        0.31729
        371416.37    3748617.92        0.31643                    371441.37    3748617.92        0.31435
        371466.37    3748617.92        0.31395                    371491.37    3748617.92        0.30812
        371516.37    3748617.92        0.30285                    371541.37    3748617.92        0.29452
        371566.37    3748617.92        0.28551                    371591.37    3748617.92        0.27545
        371616.37    3748617.92        0.26515                    371641.37    3748617.92        0.25509
        371666.37    3748617.92        0.24535                    371691.37    3748617.92        0.23599
        370916.37    3748642.92        0.13643                    370941.37    3748642.92        0.14510
        371041.37    3748642.92        0.18571                    371066.37    3748642.92        0.19793
        371091.37    3748642.92        0.21068                    371141.37    3748642.92        0.23646
        371166.37    3748642.92        0.24820                    371191.37    3748642.92        0.25805
        371216.37    3748642.92        0.27612                    371241.37    3748642.92        0.29053
        371291.37    3748642.92        0.31768                    371316.37    3748642.92        0.32891
        371341.37    3748642.92        0.33782                    371366.37    3748642.92        0.34402
        371391.37    3748642.92        0.34715                    371416.37    3748642.92        0.34771
        371441.37    3748642.92        0.34887                    371466.37    3748642.92        0.34404
        371491.37    3748642.92        0.33947                    371516.37    3748642.92        0.33079
        371566.37    3748642.92        0.31063                    371591.37    3748642.92        0.29990
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Offsite Model Output – Unit Emission Rates (1 g/s)

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: HAUL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,
L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC	
371198.14	3748962.64	4.61844	371223.14	3748962.64	4.45879	
371245.54	3748965.53	4.22827	371247.41	3748946.74	6.56435	Preschool MER
371148.14	3748987.64	2.78444	371198.14	3748987.64	2.83686	
371238.73	3748977.53	3.33937	371148.14	3749012.64	1.85792	
371203.92	3749025.94	1.60066	371215.91	3749019.58	1.74030	
371048.14	3749037.64	1.10723	371073.14	3749037.64	1.17220	
371098.14	3749037.64	1.22561	371123.14	3749037.64	1.27007	
371148.14	3749037.64	1.30996	371223.14	3749037.64	1.38932	
371048.14	3749062.64	0.79271	371073.14	3749062.64	0.84386	
371098.14	3749062.64	0.88836	371123.14	3749062.64	0.92822	
371148.14	3749062.64	0.96363	371248.14	3749062.64	1.07120	
371269.96	3749061.48	1.10743	371023.14	3749087.64	0.55678	
371048.14	3749087.64	0.59736	371073.14	3749087.64	0.63529	
371098.14	3749087.64	0.67026	371123.14	3749087.64	0.70256	
371148.14	3749087.64	0.73392	371197.43	3749094.56	0.73799	
371221.01	3749094.74	0.75942	371250.27	3749092.43	0.80099	
371023.14	3749112.64	0.44091	371048.14	3749112.64	0.46910	
371073.14	3749112.64	0.49607	371098.14	3749112.64	0.52213	
371123.14	3749112.64	0.54819	371148.14	3749112.64	0.57577	
371198.14	3749112.64	0.62499	371223.14	3749112.64	0.64716	
371248.14	3749112.64	0.66791	371273.14	3749112.64	0.69032	
371023.14	3749137.64	0.35947	371048.14	3749137.64	0.37902	
371073.14	3749137.64	0.39884	371098.14	3749137.64	0.41945	
371123.14	3749137.64	0.44123	371148.14	3749137.64	0.46423	
371198.14	3749137.64	0.50631	371223.14	3749137.64	0.52614	
371248.14	3749137.64	0.54559	371273.14	3749137.64	0.56612	
371023.14	3749162.64	0.29865	371048.14	3749162.64	0.31332	
371073.14	3749162.64	0.32856	371098.14	3749162.64	0.34581	
371123.14	3749162.64	0.36405	371148.14	3749162.64	0.38317	
371198.14	3749162.64	0.41886	371223.14	3749162.64	0.43649	
371248.14	3749162.64	0.45420	371273.14	3749162.64	0.47259	
371023.14	3749187.64	0.24903	371048.14	3749187.64	0.26087	

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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                   ***        10/21/25
 *** AERMET - VERSION  16216 ***   *** Construction HRA                                        ***        09:04:59
                                                                                                        PAGE 146
 *** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                          *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: HAUL     ***
                              INCLUDING SOURCE(S):     L0000001    , L0000002    , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010    , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018    , L0000019    , L0000020    , L0000021    ,
                 L0000022    , L0000023    , L0000024    , L0000025    , L0000026    , L0000027    , L0000028    ,  . . .      ,

                                      *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                    ** CONC OF OTHER    IN MICROGRAMS/M**3                      **

      X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)   Y-COORD (M)        CONC
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        371750.72    3749414.52       0.41568                    371775.72    3749414.52       0.39588
        371800.72    3749414.52       0.38422                    371825.72    3749414.52       0.37517
        371850.72    3749414.52       0.37025                    371875.72    3749414.52       0.36681
        371300.72    3749439.52       0.13134                    371325.72    3749439.52       0.13787
        371350.72    3749439.52       0.14582                    371375.72    3749439.52       0.15455
        371400.72    3749439.52       0.16407                    371425.72    3749439.52       0.17443
        371450.72    3749439.52       0.18554                    371475.72    3749439.52       0.19803
        371553.78    3749443.85       0.24131                    371579.30    3749442.17       0.26362
        371599.53    3749444.56       0.27709                    371628.24    3749440.32       0.31543
        371750.72    3749439.52       0.29860                    371775.72    3749439.52       0.29383
        371800.72    3749439.52       0.29132                    371825.72    3749439.52       0.29083
        371850.72    3749439.52       0.29342                    371875.72    3749439.52       0.29866
        371300.72    3749464.52       0.11731                    371325.72    3749464.52       0.12197
        371350.72    3749464.52       0.12936                    371375.72    3749464.52       0.13718
        371400.72    3749464.52       0.14595                    371425.72    3749464.52       0.15547
        371450.72    3749464.52       0.16482                    371475.72    3749464.52       0.17552
        371575.72    3749464.52       0.22588                    371600.72    3749464.52       0.24053
        371625.72    3749464.52       0.25534                    371700.72    3749464.52       0.25197
        371725.72    3749464.52       0.23602                    371750.72    3749464.52       0.22946
        371775.72    3749464.52       0.22959                    371800.72    3749464.52       0.23111
        371825.72    3749464.52       0.23401                    371850.72    3749464.52       0.23999
        371875.72    3749464.52       0.24659                    371524.64    3749492.76       0.16806  Elementary School MER
        371700.72    3749489.52       0.19624                    371725.72    3749489.52       0.18652
        371750.72    3749489.52       0.18500                    371775.72    3749489.52       0.18675
        371800.72    3749489.52       0.19144                    371825.72    3749489.52       0.19717
        371850.72    3749489.52       0.20178                    371875.72    3749489.52       0.20621
        371300.72    3749514.52       0.09836                    371325.72    3749514.52       0.10162
        371350.72    3749514.52       0.10668                    371375.72    3749514.52       0.11236
        371400.72    3749514.52       0.11877                    371425.72    3749514.52       0.12492
        371450.72    3749514.52       0.13079                    371475.72    3749514.52       0.13671
        371526.15    3749506.96       0.15468                    371700.72    3749514.52       0.16230
        371725.72    3749514.52       0.15619                    371750.72    3749514.52       0.15543
        371775.72    3749514.52       0.16142                    371800.72    3749514.52       0.16461
```

Offsite Model Output – Unit Emission Rates (1 g/s)

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: HAUL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,
L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC		X-COORD (M)	Y-COORD (M)	CONC
371801.28	3749268.47	1.54038		371826.28	3749268.47	1.23662
371851.28	3749268.47	1.03237		371876.28	3749268.47	0.89226
371705.54	3749284.00	6.87143		371726.28	3749293.47	4.26599
371751.28	3749293.47	2.74189		371776.28	3749293.47	1.91310
371801.28	3749293.47	1.41025		371826.28	3749293.47	1.12109
371851.28	3749293.47	0.94251		371876.28	3749293.47	0.81978
371701.28	3749318.47	6.39026	Residential MER	371726.28	3749318.47	3.58779
371751.28	3749318.47	2.33410		371776.28	3749318.47	1.64477
371801.28	3749318.47	1.21783		371826.28	3749318.47	0.97729
371851.28	3749318.47	0.83399		371876.28	3749318.47	0.73563
370941.37	3748617.92	0.12684		370966.37	3748617.92	0.13370
370991.37	3748617.92	0.14059		371041.37	3748617.92	0.15318
371066.37	3748617.92	0.16003		371091.37	3748617.92	0.16706
371141.37	3748617.92	0.17858		371166.37	3748617.92	0.18234
371191.37	3748617.92	0.18569		371216.37	3748617.92	0.18757
371241.37	3748617.92	0.19040		371291.37	3748617.92	0.19619
371316.37	3748617.92	0.19856		371341.37	3748617.92	0.20051
371366.37	3748617.92	0.20206		371391.37	3748617.92	0.20316
371416.37	3748617.92	0.20379		371441.37	3748617.92	0.20457
371466.37	3748617.92	0.20478		371491.37	3748617.92	0.20392
371516.37	3748617.92	0.20117		371541.37	3748617.92	0.19702
371566.37	3748617.92	0.19364		371591.37	3748617.92	0.19061
371616.37	3748617.92	0.18766		371641.37	3748617.92	0.18385
371666.37	3748617.92	0.17938		371691.37	3748617.92	0.17417
370916.37	3748642.92	0.13335		370941.37	3748642.92	0.14144
371041.37	3748642.92	0.17261		371066.37	3748642.92	0.18124
371091.37	3748642.92	0.18991		371141.37	3748642.92	0.20334
371166.37	3748642.92	0.20748		371191.37	3748642.92	0.21146
371216.37	3748642.92	0.21296		371241.37	3748642.92	0.21565
371291.37	3748642.92	0.22182		371316.37	3748642.92	0.22458
371341.37	3748642.92	0.22692		371366.37	3748642.92	0.22880
371391.37	3748642.92	0.23022		371416.37	3748642.92	0.23157

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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                   ***       10/21/25
 *** AERMET - VERSION  16216 ***   *** Construction HRA                                        ***       09:04:59
                                                                                                       PAGE 154
 *** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                          *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: ALL      ***
                              INCLUDING SOURCE(S):     1          , L0000001    , L0000002    , L0000003    , L0000004    ,
                 L0000005    , L0000006    , L0000007    , L0000008    , L0000009    , L0000010    , L0000011    , L0000012    ,
                 L0000013    , L0000014    , L0000015    , L0000016    , L0000017    , L0000018    , L0000019    , L0000020    ,
                 L0000021    , L0000022    , L0000023    , L0000024    , L0000025    , L0000026    , L0000027    ,  . . .      ,

                                      *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                    ** CONC OF OTHER    IN MICROGRAMS/M**3                      **

      X-COORD (M)   Y-COORD (M)        CONC                     X-COORD (M)   Y-COORD (M)        CONC
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        371198.14    3748962.64        6.27814                   371223.14    3748962.64        6.50672
        371245.54    3748965.53        6.77671                   371247.41    3748946.74        8.76101 Preschool MER
        371148.14    3748987.64        4.07286                   371198.14    3748987.64        4.70997
        371238.73    3748977.53        5.96427                   371148.14    3749012.64        3.25127
        371203.92    3749025.94        3.93096                   371215.91    3749019.58        4.35457
        371048.14    3749037.64        1.95817                   371073.14    3749037.64        2.13394
        371098.14    3749037.64        2.32646                   371123.14    3749037.64        2.53988
        371148.14    3749037.64        2.81120                   371223.14    3749037.64        4.43290
        371048.14    3749062.64        1.69104                   371073.14    3749062.64        1.85930
        371098.14    3749062.64        2.06229                   371123.14    3749062.64        2.29286
        371148.14    3749062.64        2.57945                   371248.14    3749062.64        5.62459
        371269.96    3749061.48        7.62721                   371023.14    3749087.64        1.39064
        371048.14    3749087.64        1.53812                   371073.14    3749087.64        1.70486
        371098.14    3749087.64        1.90568                   371123.14    3749087.64        2.14661
        371148.14    3749087.64        2.46100                   371197.43    3749094.56        3.41563
        371221.01    3749094.74        4.22879                   371250.27    3749092.43        5.88275
        371023.14    3749112.64        1.29920                   371048.14    3749112.64        1.43980
        371073.14    3749112.64        1.60549                   371098.14    3749112.64        1.80650
        371123.14    3749112.64        2.05878                   371148.14    3749112.64        2.39997
        371198.14    3749112.64        3.46101                   371223.14    3749112.64        4.34433
        371248.14    3749112.64        5.80490                   371273.14    3749112.64        8.58554
        371023.14    3749137.64        1.23329                   371048.14    3749137.64        1.37056
        371073.14    3749137.64        1.53744                   371098.14    3749137.64        1.74515
        371123.14    3749137.64        2.01222                   371148.14    3749137.64        2.36793
        371198.14    3749137.64        3.46150                   371223.14    3749137.64        4.37170
        371248.14    3749137.64        5.89009                   371273.14    3749137.64        8.75926
        371023.14    3749162.64        1.17908                   371048.14    3749162.64        1.31604
        371073.14    3749162.64        1.48341                   371098.14    3749162.64        1.69812
        371123.14    3749162.64        1.97426                   371148.14    3749162.64        2.33848
        371198.14    3749162.64        3.44010                   371223.14    3749162.64        4.36523
        371248.14    3749162.64        5.92265                   371273.14    3749162.64        8.84620
        371023.14    3749187.64        1.12424                   371048.14    3749187.64        1.25939
        371073.14    3749187.64        1.42243                   371098.14    3749187.64        1.64012
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                  ***        10/21/25
 *** AERMET - VERSION  16216 ***   *** Construction HRA                                       ***        09:04:59
                                                                                                        PAGE 158
 *** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                          *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: ALL      ***
                              INCLUDING SOURCE(S):     1          , L0000001    , L0000002    , L0000003    , L0000004    ,
                 L0000005    , L0000006    , L0000007    , L0000008    , L0000009    , L0000010    , L0000011    , L0000012    ,
                 L0000013    , L0000014    , L0000015    , L0000016    , L0000017    , L0000018    , L0000019    , L0000020    ,
                 L0000021    , L0000022    , L0000023    , L0000024    , L0000025    , L0000026    , L0000027    ,  . . .      ,

                                      *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                    ** CONC OF OTHER    IN MICROGRAMS/M**3                      **

      X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)   Y-COORD (M)        CONC
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        371750.72    3749414.52        4.42351                    371775.72    3749414.52        4.19553
        371800.72    3749414.52        3.96790                    371825.72    3749414.52        3.74944
        371850.72    3749414.52        3.55387                    371875.72    3749414.52        3.37101
        371300.72    3749439.52        1.87141                    371325.72    3749439.52        1.97321
        371350.72    3749439.52        2.07917                    371375.72    3749439.52        2.19677
        371400.72    3749439.52        2.32312                    371425.72    3749439.52        2.48328
        371450.72    3749439.52        2.66235                    371475.72    3749439.52        2.83422
        371553.78    3749443.85        3.05310                    371579.30    3749442.17        3.19105
        371599.53    3749444.56        3.16147                    371628.24    3749440.32        3.44008
        371750.72    3749439.52        3.21851                    371775.72    3749439.52        3.17177
        371800.72    3749439.52        3.09855                    371825.72    3749439.52        3.01247
        371850.72    3749439.52        2.92814                    371875.72    3749439.52        2.84423
        371300.72    3749464.52        1.51688                    371325.72    3749464.52        1.57991
        371350.72    3749464.52        1.66272                    371375.72    3749464.52        1.74895
        371400.72    3749464.52        1.84056                    371425.72    3749464.52        1.96484
        371450.72    3749464.52        2.08194                    371475.72    3749464.52        2.18772
        371575.72    3749464.52        2.44771                    371600.72    3749464.52        2.48088
        371625.72    3749464.52        2.48876                    371700.72    3749464.52        2.38662
        371725.72    3749464.52        2.37149                    371750.72    3749464.52        2.39085
        371775.72    3749464.52        2.41842                    371800.72    3749464.52        2.42447
        371825.72    3749464.52        2.41395                    371850.72    3749464.52        2.39882
        371875.72    3749464.52        2.37569                    371524.64    3749492.76        1.73893   Elementary School MER
        371700.72    3749489.52        1.77334                    371725.72    3749489.52        1.77618
        371750.72    3749489.52        1.82159                    371775.72    3749489.52        1.87236
        371800.72    3749489.52        1.92113                    371825.72    3749489.52        1.95438
        371850.72    3749489.52        1.97049                    371875.72    3749489.52        1.97430
        371300.72    3749514.52        1.09944                    371325.72    3749514.52        1.13312
        371350.72    3749514.52        1.17745                    371375.72    3749514.52        1.22139
        371400.72    3749514.52        1.27313                    371425.72    3749514.52        1.31597
        371450.72    3749514.52        1.35345                    371475.72    3749514.52        1.38303
        371526.15    3749506.96        1.50590                    371700.72    3749514.52        1.38377
        371725.72    3749514.52        1.39135                    371750.72    3749514.52        1.43135
        371775.72    3749514.52        1.50296                    371800.72    3749514.52        1.55297
```

Offsite Model Output – Unit Emission Rates (1 g/s)

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 , L0000001 , L0000002 , L0000003 , L0000004 ,
L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 ,
L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 ,
L0000021 , L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC		X-COORD (M)	Y-COORD (M)	CONC
371801.28	3749268.47	7.81959		371826.28	3749268.47	6.60395
371851.28	3749268.47	5.71020		371876.28	3749268.47	5.04533
371705.54	3749284.00	26.93781		371726.28	3749293.47	19.40267
371751.28	3749293.47	13.64901		371776.28	3749293.47	10.29596
371801.28	3749293.47	8.10562		371826.28	3749293.47	6.70508
371851.28	3749293.47	5.76211		371876.28	3749293.47	5.07176
371701.28	3749318.47	27.56228	Residential MER	371726.28	3749318.47	18.19015
371751.28	3749318.47	13.16407		371776.28	3749318.47	10.03990
371801.28	3749318.47	7.93571		371826.28	3749318.47	6.56557
371851.28	3749318.47	5.65393		371876.28	3749318.47	4.98802
370941.37	3748617.92	0.40759		370966.37	3748617.92	0.43157
370991.37	3748617.92	0.45649		371041.37	3748617.92	0.50671
371066.37	3748617.92	0.53405		371091.37	3748617.92	0.56137
371141.37	3748617.92	0.61549		371166.37	3748617.92	0.63770
371191.37	3748617.92	0.65704		371216.37	3748617.92	0.68071
371241.37	3748617.92	0.69905		371291.37	3748617.92	0.72843
371316.37	3748617.92	0.73745		371341.37	3748617.92	0.74328
371366.37	3748617.92	0.74585		371391.37	3748617.92	0.74518
371416.37	3748617.92	0.74143		371441.37	3748617.92	0.73783
371466.37	3748617.92	0.73589		371491.37	3748617.92	0.72724
371516.37	3748617.92	0.71791		371541.37	3748617.92	0.70101
371566.37	3748617.92	0.68276		371591.37	3748617.92	0.66341
371616.37	3748617.92	0.64373		371641.37	3748617.92	0.62350
371666.37	3748617.92	0.60308		371691.37	3748617.92	0.58246
370916.37	3748642.92	0.40782		370941.37	3748642.92	0.43312
371041.37	3748642.92	0.54305		371066.37	3748642.92	0.57432
371091.37	3748642.92	0.60544		371141.37	3748642.92	0.66581
371166.37	3748642.92	0.69119		371191.37	3748642.92	0.71391
371216.37	3748642.92	0.73950		371241.37	3748642.92	0.76063
371291.37	3748642.92	0.79543		371316.37	3748642.92	0.80752
371341.37	3748642.92	0.81574		371366.37	3748642.92	0.82033
371391.37	3748642.92	0.82110		371416.37	3748642.92	0.81985

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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                  ***        10/21/25
 *** AERMET - VERSION  16216 ***   *** Construction HRA                                       ***        09:04:59
                                                                                                        PAGE 166
 *** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                                  *** THE SUMMARY OF MAXIMUM PERIOD ( 43848 HRS) RESULTS ***


                                  ** CONC OF OTHER    IN MICROGRAMS/M**3                    **

                                                                                                  NETWORK
GROUP ID                       AVERAGE CONC              RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                                 Residential MER Location
LIGHTING  1ST HIGHEST VALUE IS      18.83572 AT (  371701.28,  3749318.47,    47.52,    59.65,    0.00)  DC
          2ND HIGHEST VALUE IS      17.12978 AT (  371705.54,  3749284.00,    50.25,    52.18,    0.00)  DC
          3RD HIGHEST VALUE IS      14.12516 AT (  371701.28,  3749268.47,    51.79,    51.79,    0.00)  DC
          4TH HIGHEST VALUE IS      12.56435 AT (  371726.28,  3749293.47,    50.18,    53.28,    0.00)  DC
          5TH HIGHEST VALUE IS      12.42933 AT (  371726.28,  3749318.47,    49.27,    59.92,    0.00)  DC
          6TH HIGHEST VALUE IS       9.51913 AT (  371563.64,  3749364.49,    40.35,    52.79,    0.00)  DC
          7TH HIGHEST VALUE IS       9.33556 AT (  371726.28,  3749268.47,    52.75,    52.75,    0.00)  DC
          8TH HIGHEST VALUE IS       8.85431 AT (  371700.72,  3749364.52,    46.89,    59.92,    0.00)  DC
          9TH HIGHEST VALUE IS       8.80361 AT (  371751.28,  3749318.47,    51.48,    59.92,    0.00)  DC
         10TH HIGHEST VALUE IS       8.53052 AT (  371751.28,  3749293.47,    51.98,    59.36,    0.00)  DC

FMP       1ST HIGHEST VALUE IS       9.50329 AT (  371701.28,  3749118.47,    49.38,    49.38,    0.00)  DC
          2ND HIGHEST VALUE IS       8.77594 AT (  371701.28,  3749093.47,    49.35,    49.35,    0.00)  DC
          3RD HIGHEST VALUE IS       8.21450 AT (  371701.05,  3749151.87,    50.62,    50.62,    0.00)  DC
          4TH HIGHEST VALUE IS       7.10038 AT (  371701.28,  3749168.47,    52.00,    52.00,    0.00)  DC
          5TH HIGHEST VALUE IS       7.06161 AT (  371726.28,  3749118.47,    48.89,    48.89,    0.00)  DC
          6TH HIGHEST VALUE IS       6.87544 AT (  371701.28,  3749068.47,    49.34,    49.34,    0.00)  DC
          7TH HIGHEST VALUE IS       6.50311 AT (  371726.28,  3749093.47,    49.08,    49.08,    0.00)  DC
          8TH HIGHEST VALUE IS       5.95326 AT (  371726.28,  3749168.47,    51.60,    51.60,    0.00)  DC
          9TH HIGHEST VALUE IS       5.49712 AT (  371751.28,  3749118.47,    48.66,    48.66,    0.00)  DC
         10TH HIGHEST VALUE IS       5.35735 AT (  371699.84,  3749048.88,    49.18,    49.18,    0.00)  DC

HAUL      1ST HIGHEST VALUE IS      10.03577 AT (  371699.88,  3748948.96,    45.12,    45.12,    0.00)  DC
          2ND HIGHEST VALUE IS       9.30638 AT (  371701.28,  3748968.47,    46.31,    46.31,    0.00)  DC
          3RD HIGHEST VALUE IS       8.80939 AT (  371700.39,  3748997.27,    47.81,    47.81,    0.00)  DC
          4TH HIGHEST VALUE IS       8.62720 AT (  371699.84,  3749048.88,    49.18,    49.18,    0.00)  DC
          5TH HIGHEST VALUE IS       8.47761 AT (  371701.28,  3749018.47,    48.60,    48.60,    0.00)  DC
          6TH HIGHEST VALUE IS       8.42130 AT (  371701.28,  3749068.47,    49.34,    49.34,    0.00)  DC
          7TH HIGHEST VALUE IS       8.38109 AT (  371701.28,  3749093.47,    49.35,    49.35,    0.00)  DC
          8TH HIGHEST VALUE IS       8.17832 AT (  371701.28,  3749118.47,    49.38,    49.38,    0.00)  DC
          9TH HIGHEST VALUE IS       8.07090 AT (  371701.05,  3749151.87,    50.62,    50.62,    0.00)  DC
         10TH HIGHEST VALUE IS       8.03291 AT (  371700.23,  3749203.51,    54.14,    54.14,    0.00)  DC
                                                 Residential MER Location
ALL       1ST HIGHEST VALUE IS      27.56228 AT (  371701.28,  3749318.47,    47.52,    59.65,    0.00)  DC
          2ND HIGHEST VALUE IS      26.93781 AT (  371705.54,  3749284.00,    50.25,    52.18,    0.00)  DC
          3RD HIGHEST VALUE IS      25.21660 AT (  371701.28,  3749268.47,    51.79,    51.79,    0.00)  DC
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         4TH HIGHEST VALUE IS      19.48810 AT (  371701.28,  3749118.47,    49.38,    49.38,    0.00)  DC
         5TH HIGHEST VALUE IS      19.40267 AT (  371726.28,  3749293.47,    50.18,    53.28,    0.00)  DC
         6TH HIGHEST VALUE IS      18.71310 AT (  371701.28,  3749093.47,    49.35,    49.35,    0.00)  DC
         7TH HIGHEST VALUE IS      18.50646 AT (  371701.05,  3749151.87,    50.62,    50.62,    0.00)  DC
         8TH HIGHEST VALUE IS      18.19015 AT (  371726.28,  3749318.47,    49.27,    59.92,    0.00)  DC
         9TH HIGHEST VALUE IS      17.55905 AT (  371701.28,  3749168.47,    52.00,    52.00,    0.00)  DC
        10TH HIGHEST VALUE IS      16.80128 AT (  371726.28,  3749268.47,    52.75,    52.75,    0.00)  DC


*** RECEPTOR TYPES:  GC = GRIDCART
                     GP = GRIDPOLR
                     DC = DISCCART
                     DP = DISCPOLR
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                   ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                       ***        09:04:59
                                                                                                       PAGE 167
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            2 Warning Message(s)
A Total of         1474 Informational Message(s)

A Total of        43848 Hours Were Processed

A Total of         1223 Calm Hours Identified

A Total of          251 Missing Hours Identified (  0.57 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
ME W186    1496       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
ME W187    1496       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

   ***********************************
   *** AERMOD Finishes Successfully ***
   ***********************************
```

Offsite Model Output – Unit Emission Rates (1 g/s)

```
*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:33:51
                                                                                                               PAGE   1
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

  --  DEPOSITION LOGIC  --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
**Model Uses NO WET DEPLETION.  WETDPLT  =  F

**Model Uses URBAN Dispersion Algorithm for the SBL for    96 Source(s),
  for Total of    1 Urban Area(s):
  Urban Population =   9818605.0 ;  Urban Roughness Length =  1.000 m

**Model Allows User-Specified Options:
       1. Stack-tip Downwash.
       2. Allow FLAT/ELEV Terrain Option by Source,
          with      0 FLAT and     96 ELEV Source(s).
       3. Use Calms Processing Routine.
       4. Use Missing Data Processing Routine.
       5. No Exponential Decay.
       6. Urban Roughness Length of 1.0 Meter Used.

**Other Options Specified:
       FASTALL  - Use effective sigma-y to optimize meander for
                  POINT and VOLUME sources, and hybrid approach
                  to optimize AREA sources (formerly TOXICS option)
       ADJ_U*   - Use ADJ_U* option for SBL in AERMET
       CCVR_Sub - Meteorological data includes CCVR substitutions
       TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  OTHER

**Model Calculates PERIOD Averages Only

**This Run Includes:     96 Source(s);       4 Source Group(s); and      50 Receptor(s)

              with:       0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
               and:      92 VOLUME source(s)
               and:       4 AREA type source(s)
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               and:      0 LINE source(s)
               and:      0 RLINE/RLINEXT source(s)
               and:      0 OPENPIT source(s)
               and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date:  16216

**Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    19.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.7 MB of RAM.

**Input Runstream File:          aermod.inp
**Output Print File:             aermod.out

**Detailed Error/Message File:   Mira Costa HS.err
**File for Summary of Results:   Mira Costa HS.sum
```

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000001	0	0.10870E-01	371685.8	3749323.3	47.0	4.15	5.95	3.26	YES	HRDOW
L0000002	0	0.10870E-01	371685.8	3749310.5	47.7	4.15	5.95	3.26	YES	HRDOW
L0000003	0	0.10870E-01	371685.8	3749297.7	48.5	4.15	5.95	3.26	YES	HRDOW
L0000004	0	0.10870E-01	371685.8	3749284.9	49.7	4.15	5.95	3.26	YES	HRDOW
L0000005	0	0.10870E-01	371685.8	3749272.1	50.9	4.15	5.95	3.26	YES	HRDOW
L0000006	0	0.10870E-01	371685.8	3749259.3	51.9	4.15	5.95	3.26	YES	HRDOW
L0000007	0	0.10870E-01	371685.7	3749246.5	52.9	4.15	5.95	3.26	YES	HRDOW
L0000008	0	0.10870E-01	371685.6	3749233.7	53.6	4.15	5.95	3.26	YES	HRDOW
L0000009	0	0.10870E-01	371685.6	3749220.9	53.9	4.15	5.95	3.26	YES	HRDOW
L0000010	0	0.10870E-01	371685.5	3749208.1	54.2	4.15	5.95	3.26	YES	HRDOW
L0000011	0	0.10870E-01	371685.4	3749195.3	53.6	4.15	5.95	3.26	YES	HRDOW
L0000012	0	0.10870E-01	371685.3	3749182.5	53.0	4.15	5.95	3.26	YES	HRDOW
L0000013	0	0.10870E-01	371685.2	3749169.7	52.3	4.15	5.95	3.26	YES	HRDOW
L0000014	0	0.10870E-01	371685.1	3749156.9	51.4	4.15	5.95	3.26	YES	HRDOW
L0000015	0	0.10870E-01	371685.0	3749144.1	50.6	4.15	5.95	3.26	YES	HRDOW
L0000016	0	0.10870E-01	371684.9	3749131.3	50.2	4.15	5.95	3.26	YES	HRDOW
L0000017	0	0.10870E-01	371684.8	3749118.5	49.8	4.15	5.95	3.26	YES	HRDOW
L0000018	0	0.10870E-01	371684.7	3749105.7	49.6	4.15	5.95	3.26	YES	HRDOW
L0000019	0	0.10870E-01	371684.6	3749092.9	49.6	4.15	5.95	3.26	YES	HRDOW
L0000020	0	0.10870E-01	371684.5	3749080.1	49.5	4.15	5.95	3.26	YES	HRDOW
L0000021	0	0.10870E-01	371684.4	3749067.3	49.4	4.15	5.95	3.26	YES	HRDOW
L0000022	0	0.10870E-01	371684.3	3749054.5	49.3	4.15	5.95	3.26	YES	HRDOW
L0000023	0	0.10870E-01	371684.1	3749041.7	49.0	4.15	5.95	3.26	YES	HRDOW
L0000024	0	0.10870E-01	371684.0	3749028.9	48.7	4.15	5.95	3.26	YES	HRDOW
L0000025	0	0.10870E-01	371683.8	3749016.1	48.3	4.15	5.95	3.26	YES	HRDOW
L0000026	0	0.10870E-01	371683.7	3749003.3	47.8	4.15	5.95	3.26	YES	HRDOW
L0000027	0	0.10870E-01	371683.5	3748990.5	47.3	4.15	5.95	3.26	YES	HRDOW
L0000028	0	0.10870E-01	371683.4	3748977.7	46.5	4.15	5.95	3.26	YES	HRDOW
L0000029	0	0.10870E-01	371683.2	3748964.9	45.6	4.15	5.95	3.26	YES	HRDOW
L0000030	0	0.10870E-01	371683.1	3748952.1	44.9	4.15	5.95	3.26	YES	HRDOW
L0000031	0	0.10870E-01	371682.9	3748939.3	44.3	4.15	5.95	3.26	YES	HRDOW
L0000032	0	0.10870E-01	371682.4	3748926.8	43.8	4.15	5.95	3.26	YES	HRDOW
L0000033	0	0.10870E-01	371669.6	3748926.7	43.4	4.15	5.95	3.26	YES	HRDOW
L0000034	0	0.10870E-01	371656.8	3748926.5	42.9	4.15	5.95	3.26	YES	HRDOW
L0000035	0	0.10870E-01	371644.0	3748926.3	42.4	4.15	5.95	3.26	YES	HRDOW
L0000036	0	0.10870E-01	371631.2	3748926.1	41.8	4.15	5.95	3.26	YES	HRDOW
L0000037	0	0.10870E-01	371618.4	3748925.9	41.4	4.15	5.95	3.26	YES	HRDOW

L0000038	0	0.10870E-01	371605.6	3748925.8	41.0	4.15	5.95	3.26	YES	HRDOW
L0000039	0	0.10870E-01	371592.8	3748925.6	40.8	4.15	5.95	3.26	YES	HRDOW
L0000040	0	0.10870E-01	371580.0	3748925.4	40.7	4.15	5.95	3.26	YES	HRDOW

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000041	0	0.10870E-01	371567.2	3748925.2	40.8	4.15	5.95	3.26	YES	HRDOW
L0000042	0	0.10870E-01	371554.4	3748925.1	40.8	4.15	5.95	3.26	YES	HRDOW
L0000043	0	0.10870E-01	371541.6	3748924.9	41.1	4.15	5.95	3.26	YES	HRDOW
L0000044	0	0.10870E-01	371528.8	3748924.7	41.5	4.15	5.95	3.26	YES	HRDOW
L0000045	0	0.10870E-01	371516.0	3748924.5	42.0	4.15	5.95	3.26	YES	HRDOW
L0000046	0	0.10870E-01	371503.2	3748924.3	42.6	4.15	5.95	3.26	YES	HRDOW
L0000047	0	0.10870E-01	371490.4	3748924.2	43.2	4.15	5.95	3.26	YES	HRDOW
L0000048	0	0.10870E-01	371477.6	3748924.0	43.8	4.15	5.95	3.26	YES	HRDOW
L0000049	0	0.10870E-01	371464.8	3748923.8	44.4	4.15	5.95	3.26	YES	HRDOW
L0000050	0	0.10870E-01	371452.0	3748923.7	45.0	4.15	5.95	3.26	YES	HRDOW
L0000051	0	0.10870E-01	371439.2	3748923.5	45.7	4.15	5.95	3.26	YES	HRDOW
L0000052	0	0.10870E-01	371426.4	3748923.3	46.5	4.15	5.95	3.26	YES	HRDOW
L0000053	0	0.10870E-01	371413.6	3748923.1	47.1	4.15	5.95	3.26	YES	HRDOW
L0000054	0	0.10870E-01	371400.8	3748923.0	47.8	4.15	5.95	3.26	YES	HRDOW
L0000055	0	0.10870E-01	371388.0	3748922.8	48.3	4.15	5.95	3.26	YES	HRDOW
L0000056	0	0.10870E-01	371375.2	3748922.6	48.8	4.15	5.95	3.26	YES	HRDOW
L0000057	0	0.10870E-01	371362.4	3748922.5	49.2	4.15	5.95	3.26	YES	HRDOW
L0000058	0	0.10870E-01	371349.6	3748922.3	49.6	4.15	5.95	3.26	YES	HRDOW
L0000059	0	0.10870E-01	371336.8	3748922.1	50.0	4.15	5.95	3.26	YES	HRDOW
L0000060	0	0.10870E-01	371324.0	3748922.0	50.3	4.15	5.95	3.26	YES	HRDOW
L0000061	0	0.10870E-01	371311.2	3748921.8	50.7	4.15	5.95	3.26	YES	HRDOW
L0000062	0	0.10870E-01	371298.4	3748921.6	51.0	4.15	5.95	3.26	YES	HRDOW
L0000063	0	0.10870E-01	371285.6	3748921.7	51.4	4.15	5.95	3.26	YES	HRDOW
L0000064	0	0.10870E-01	371272.8	3748921.9	51.7	4.15	5.95	3.26	YES	HRDOW
L0000065	0	0.10870E-01	371260.0	3748922.0	52.0	4.15	5.95	3.26	YES	HRDOW
L0000066	0	0.10870E-01	371247.2	3748922.2	52.3	4.15	5.95	3.26	YES	HRDOW
L0000067	0	0.10870E-01	371234.4	3748922.3	52.5	4.15	5.95	3.26	YES	HRDOW
L0000068	0	0.10870E-01	371221.6	3748922.5	52.7	4.15	5.95	3.26	YES	HRDOW
L0000069	0	0.10870E-01	371208.8	3748922.6	53.2	4.15	5.95	3.26	YES	HRDOW
L0000070	0	0.10870E-01	371196.0	3748922.8	53.6	4.15	5.95	3.26	YES	HRDOW
L0000071	0	0.10870E-01	371183.2	3748922.9	54.0	4.15	5.95	3.26	YES	HRDOW
L0000072	0	0.10870E-01	371170.4	3748923.1	54.5	4.15	5.95	3.26	YES	HRDOW
L0000073	0	0.10870E-01	371157.6	3748923.2	54.8	4.15	5.95	3.26	YES	HRDOW
L0000074	0	0.10870E-01	371144.8	3748923.4	55.1	4.15	5.95	3.26	YES	HRDOW
L0000075	0	0.10870E-01	371132.0	3748923.5	55.7	4.15	5.95	3.26	YES	HRDOW
L0000076	0	0.10870E-01	371119.2	3748923.6	56.2	4.15	5.95	3.26	YES	HRDOW
L0000077	0	0.10870E-01	371106.4	3748923.8	56.5	4.15	5.95	3.26	YES	HRDOW

L0000078	0	0.10870E-01	371093.6	3748924.2	56.9	4.15	5.95	3.26	YES	HRDOW
L0000079	0	0.10870E-01	371080.8	3748924.8	57.1	4.15	5.95	3.26	YES	HRDOW
L0000080	0	0.10870E-01	371068.0	3748925.5	57.2	4.15	5.95	3.26	YES	HRDOW

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000081	0	0.10870E-01	371055.2	3748926.1	57.3	4.15	5.95	3.26	YES	HRDOW
L0000082	0	0.10870E-01	371042.4	3748926.7	57.4	4.15	5.95	3.26	YES	HRDOW
L0000083	0	0.10870E-01	371029.6	3748927.3	57.4	4.15	5.95	3.26	YES	HRDOW
L0000084	0	0.10870E-01	371016.9	3748927.9	57.3	4.15	5.95	3.26	YES	HRDOW
L0000085	0	0.10870E-01	371004.1	3748928.5	57.2	4.15	5.95	3.26	YES	HRDOW
L0000086	0	0.10870E-01	370991.3	3748929.1	57.2	4.15	5.95	3.26	YES	HRDOW
L0000087	0	0.10870E-01	370978.5	3748929.7	57.0	4.15	5.95	3.26	YES	HRDOW
L0000088	0	0.10870E-01	370965.7	3748930.3	56.8	4.15	5.95	3.26	YES	HRDOW
L0000089	0	0.10870E-01	370952.9	3748931.0	56.6	4.15	5.95	3.26	YES	HRDOW
L0000090	0	0.10870E-01	370940.1	3748931.6	56.4	4.15	5.95	3.26	YES	HRDOW
L0000091	0	0.10870E-01	370927.4	3748932.2	56.1	4.15	5.95	3.26	YES	HRDOW
L0000092	0	0.10870E-01	370914.6	3748932.8	55.9	4.15	5.95	3.26	YES	HRDOW

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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:33:51
                                                                                                               PAGE   5
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*
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*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
1	0	0.73040E-04	371509.1	3749324.8	44.7	4.15	15	1.93	YES	HRDOW
2	0	0.31748E-04	371304.9	3749325.7	47.3	4.15	16	1.93	YES	HRDOW
3	0	0.18255E-03	371441.2	3749067.7	52.3	4.15	12	1.93	YES	HRDOW
4	0	0.51520E-03	371400.4	3749220.0	52.9	4.15	8	1.93	YES	HRDOW

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
LIGHTING	1 , 2 ,
FMP	3 , 4 ,
HAUL	L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 ,
	L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 ,
	L0000017 , L0000018 , L0000019 , L0000020 , L0000021 , L0000022 , L0000023 , L0000024 ,
	L0000025 , L0000026 , L0000027 , L0000028 , L0000029 , L0000030 , L0000031 , L0000032 ,
	L0000033 , L0000034 , L0000035 , L0000036 , L0000037 , L0000038 , L0000039 , L0000040 ,
	L0000041 , L0000042 , L0000043 , L0000044 , L0000045 , L0000046 , L0000047 , L0000048 ,
	L0000049 , L0000050 , L0000051 , L0000052 , L0000053 , L0000054 , L0000055 , L0000056 ,
	L0000057 , L0000058 , L0000059 , L0000060 , L0000061 , L0000062 , L0000063 , L0000064 ,
	L0000065 , L0000066 , L0000067 , L0000068 , L0000069 , L0000070 , L0000071 , L0000072 ,
	L0000073 , L0000074 , L0000075 , L0000076 , L0000077 , L0000078 , L0000079 , L0000080 ,
	L0000081 , L0000082 , L0000083 , L0000084 , L0000085 , L0000086 , L0000087 , L0000088 ,
	L0000089 , L0000090 , L0000091 , L0000092 ,
ALL	1 , L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 ,
	L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 ,
	L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 , L0000022 , L0000023 ,
	L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , L0000029 , L0000030 , L0000031 ,
	L0000032 , L0000033 , L0000034 , L0000035 , L0000036 , L0000037 , L0000038 , L0000039 ,

L0000040 , L0000041 , L0000042 , L0000043 , L0000044 , L0000045 , L0000046 , L0000047 ,

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
	L0000048 , L0000049 , L0000050 , L0000051 , L0000052 , L0000053 , L0000054 , L0000055 ,
	L0000056 , L0000057 , L0000058 , L0000059 , L0000060 , L0000061 , L0000062 , L0000063 ,
	L0000064 , L0000065 , L0000066 , L0000067 , L0000068 , L0000069 , L0000070 , L0000071 ,
	L0000072 , L0000073 , L0000074 , L0000075 , L0000076 , L0000077 , L0000078 , L0000079 ,
	L0000080 , L0000081 , L0000082 , L0000083 , L0000084 , L0000085 , L0000086 , L0000087 ,
	L0000088 , L0000089 , L0000090 , L0000091 , L0000092 , 2 , 3 , 4 ,

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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:33:51
                                                                                                                PAGE   8
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                                  *** SOURCE IDs DEFINED AS URBAN SOURCES ***

 URBAN ID   URBAN POP                              SOURCE IDs
 --------   ---------                              ----------

            9818605.   1          , L0000001    , L0000002    , L0000003    , L0000004    , L0000005    , L0000006    ,
L0000007    ,
            L0000008    , L0000009    , L0000010    , L0000011    , L0000012    , L0000013    , L0000014    , L0000015    ,
            L0000016    , L0000017    , L0000018    , L0000019    , L0000020    , L0000021    , L0000022    , L0000023    ,
            L0000024    , L0000025    , L0000026    , L0000027    , L0000028    , L0000029    , L0000030    , L0000031    ,
            L0000032    , L0000033    , L0000034    , L0000035    , L0000036    , L0000037    , L0000038    , L0000039    ,
            L0000040    , L0000041    , L0000042    , L0000043    , L0000044    , L0000045    , L0000046    , L0000047    ,
            L0000048    , L0000049    , L0000050    , L0000051    , L0000052    , L0000053    , L0000054    , L0000055    ,
            L0000056    , L0000057    , L0000058    , L0000059    , L0000060    , L0000061    , L0000062    , L0000063    ,
            L0000064    , L0000065    , L0000066    , L0000067    , L0000068    , L0000069    , L0000070    , L0000071    ,
            L0000072    , L0000073    , L0000074    , L0000075    , L0000076    , L0000077    , L0000078    , L0000079    ,
            L0000080    , L0000081    , L0000082    , L0000083    , L0000084    , L0000085    , L0000086    , L0000087    ,
            L0000088    , L0000089    , L0000090    , L0000091    , L0000092    , 2           , 3           , 4           ,
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:33:51
                                                                                                               PAGE   9
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = 1            ; SOURCE TYPE = AREAPOLY :
 HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                                DAY OF WEEK = WEEKDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .1000E+01
   9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .0000E+00   13  .1000E+01   14  .1000E+01   15  .1000E+01   16  .1000E+01
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SATURDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:33:51
                                                                                                               PAGE  10
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000001 to L0000092    ; SOURCE TYPE = VOLUME   :
 HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                                DAY OF WEEK = WEEKDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .1000E+01
   9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .0000E+00   13  .1000E+01   14  .1000E+01   15  .1000E+01   16  .1000E+01
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SATURDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6  .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14  .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22  .0000E+00   23  .0000E+00   24  .0000E+00
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*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = 2   ; SOURCE TYPE = AREAPOLY :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.0000E+00	13	.1000E+01	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SUNDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = 3 ; SOURCE TYPE = AREAPOLY :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.0000E+00	13	.1000E+01	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SUNDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = 4 ; SOURCE TYPE = AREAPOLY :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.0000E+00	13	.1000E+01	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SUNDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\MET DATA\KHHR_v9.SFC Met Version: 16216
Profile file: ..\MET DATA\KHHR_v9.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 3167 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2012 Year: 2012

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
12	01	01	1	01	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.24	2.79	1.00	0.00	0.	7.9	283.8	2.0
12	01	01	1	02	-2.1	0.068	-9.000	-9.000	-999.	43.	13.3	0.24	2.79	1.00	0.53	305.	7.9	283.1	2.0
12	01	01	1	03	-9.0	0.127	-9.000	-9.000	-999.	109.	20.8	0.24	2.79	1.00	1.18	323.	7.9	282.5	2.0
12	01	01	1	04	-2.2	0.068	-9.000	-9.000	-999.	43.	13.3	0.24	2.79	1.00	0.53	296.	7.9	282.0	2.0
12	01	01	1	05	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.24	2.79	1.00	0.00	0.	7.9	281.4	2.0
12	01	01	1	06	-6.0	0.103	-9.000	-9.000	-999.	80.	16.7	0.24	2.79	1.00	0.97	321.	7.9	281.4	2.0
12	01	01	1	07	-4.3	0.088	-9.000	-9.000	-999.	63.	14.4	0.24	2.79	1.00	0.82	313.	7.9	280.4	2.0
12	01	01	1	08	15.7	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.24	2.79	0.55	0.00	0.	7.9	281.4	2.0
12	01	01	1	09	35.7	0.115	0.353	0.013	45.	93.	-3.8	0.24	2.79	0.32	0.63	179.	7.9	285.4	2.0
12	01	01	1	10	109.0	0.141	0.727	0.009	128.	127.	-2.3	0.24	2.79	0.24	0.70	170.	7.9	289.2	2.0
12	01	01	1	11	164.4	0.149	1.186	0.005	370.	138.	-1.8	0.24	2.79	0.21	0.70	222.	7.9	297.0	2.0
12	01	01	1	12	191.7	0.163	1.525	0.005	672.	158.	-2.1	0.24	2.79	0.20	0.79	12.	7.9	299.9	2.0
12	01	01	1	13	191.3	0.170	1.819	0.005	1144.	168.	-2.3	0.24	2.79	0.20	0.84	260.	7.9	300.9	2.0
12	01	01	1	14	161.6	0.344	1.852	0.005	1428.	483.	-22.7	0.24	2.79	0.21	2.49	260.	7.9	298.8	2.0
12	01	01	1	15	105.0	0.367	1.638	0.005	1521.	534.	-42.8	0.24	2.79	0.24	2.84	292.	7.9	293.8	2.0
12	01	01	1	16	29.7	0.383	1.079	0.005	1539.	570.	-172.5	0.24	2.79	0.33	3.22	276.	7.9	290.4	2.0
12	01	01	1	17	-24.8	0.287	-9.000	-9.000	-999.	374.	90.3	0.24	2.79	0.59	2.52	284.	7.9	289.2	2.0
12	01	01	1	18	-26.7	0.269	-9.000	-9.000	-999.	336.	79.8	0.24	2.79	1.00	2.38	285.	7.9	287.5	2.0
12	01	01	1	19	-10.2	0.137	-9.000	-9.000	-999.	133.	22.7	0.24	2.79	1.00	1.26	287.	7.9	287.5	2.0
12	01	01	1	20	-6.2	0.106	-9.000	-9.000	-999.	83.	17.2	0.24	2.79	1.00	0.99	303.	7.9	287.0	2.0
12	01	01	1	21	-7.6	0.117	-9.000	-9.000	-999.	96.	19.1	0.24	2.79	1.00	1.09	326.	7.9	286.4	2.0
12	01	01	1	22	-6.8	0.110	-9.000	-9.000	-999.	88.	18.0	0.24	2.79	1.00	1.03	297.	7.9	285.9	2.0
12	01	01	1	23	-19.9	0.200	-9.000	-9.000	-999.	214.	43.9	0.24	2.79	1.00	1.79	290.	7.9	285.9	2.0
12	01	01	1	24	-19.6	0.196	-9.000	-9.000	-999.	209.	42.3	0.24	2.79	1.00	1.76	282.	7.9	285.9	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
12	01	01	01	7.9	1	-999.	-99.00	283.8	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:33:51
                                                                                                               PAGE 108
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                          *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: LIGHTING ***
                              INCLUDING SOURCE(S):     1          , 2          ,

                                        *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                      ** CONC OF OTHER    IN MICROGRAMS/M**3                      **

      X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        371440.08    3749135.17       12.43869                     371465.08    3749131.72        8.57972
        371489.65    3749131.29        6.45798                     371514.65    3749131.29        5.18072
        371540.94    3749131.29        4.32237                     371529.68    3749003.95        1.76428
        371590.08    3749138.62        3.46064                     371573.64    3749061.36        2.26676
        371451.45    3749018.62        3.58746                     371482.49    3749018.62        2.71878
        371440.08    3749155.85       10.23042                     371464.65    3749154.99        8.10407
        371490.08    3749153.70        6.55655                     371514.65    3749154.99        5.54844
        371540.08    3749152.83        4.77895                     371528.82    3748971.97        1.33753
        371590.08    3749156.29        3.86142                     371449.32    3748987.94        2.61705
        371640.08    3749160.17        3.14510                     371662.06    3749160.17        2.80582
        371439.22    3749184.74        8.75752 Onsite HS MER       371464.22    3749175.24        7.52746
        371489.65    3749175.24        6.51351                     371513.35    3749176.54        5.85921
        371540.51    3749175.24        5.25379                     371441.63    3749110.06       11.69005
        371590.08    3749179.13        4.53639                     371488.17    3749200.71        6.79431
        371649.58    3749197.69        4.22277                     371665.08    3749185.17        3.37020
        371626.56    3749061.25        1.77795                     371658.46    3749062.11        1.56157
        371626.05    3749031.03        1.45664                     371511.63    3749204.56        6.63873
        371540.94    3749203.26        6.31804                     371566.37    3749205.42        6.19167
        371590.94    3749205.85        5.93951                     371616.37    3749205.42        5.46920
        371657.35    3749031.03        1.28109                     371665.08    3749210.17        4.56454
        371421.09    3749302.08       11.29383                     371454.72    3749301.21        9.96086
        371420.15    3749273.16       11.15087                     371455.08    3749276.61        9.61138
        371421.37    3749245.53       10.88131                     371456.73    3749248.12        8.66619
        371549.94    3749046.97        2.29142                     371572.78    3749031.86        1.82452
        371600.80    3749031.43        1.61568                     371600.76    3749061.21        1.99201
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*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                          ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                               ***        09:33:51
                                                                                                               PAGE 109
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

                          *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: FMP      ***
                              INCLUDING SOURCE(S):     3          , 4          ,

                                        *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                      ** CONC OF OTHER    IN MICROGRAMS/M**3                      **

      X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        371440.08    3749135.17       14.62954                     371465.08    3749131.72       12.34641
        371489.65    3749131.29       12.15357                     371514.65    3749131.29       12.93164
        371540.94    3749131.29       16.54685                     371529.68    3749003.95        8.99264
        371590.08    3749138.62       24.23044                     371573.64    3749061.36       31.40663
        371451.45    3749018.62       10.99024                     371482.49    3749018.62       15.02889
        371440.08    3749155.85       38.09773                     371464.65    3749154.99       25.23222
        371490.08    3749153.70       17.44534                     371514.65    3749154.99       14.65423
        371540.08    3749152.83       13.83403                     371528.82    3748971.97        3.84394
        371590.08    3749156.29       13.54298                     371449.32    3748987.94        4.91051
        371640.08    3749160.17       11.83670                     371662.06    3749160.17       10.42439
        371439.22    3749184.74      116.58574 Onsite HS MER       371464.22    3749175.24       48.10671
        371489.65    3749175.24       26.61260                     371513.35    3749176.54       18.46998
        371540.51    3749175.24       13.78200                     371441.63    3749110.06       11.23192
        371590.08    3749179.13        9.91207                     371488.17    3749200.71       34.96613
        371649.58    3749197.69        6.56055                     371665.08    3749185.17        7.16073
        371626.56    3749061.25       14.63221                     371658.46    3749062.11       10.14355
        371626.05    3749031.03        7.86313                     371511.63    3749204.56       21.98093
        371540.94    3749203.26       14.28317                     371566.37    3749205.42       10.76372
        371590.94    3749205.85        8.64400                     371616.37    3749205.42        7.23325
        371657.35    3749031.03        5.74182                     371665.08    3749210.17        5.50940
        371421.09    3749302.08        4.04052                     371454.72    3749301.21        4.14851
        371420.15    3749273.16        8.23040                     371455.08    3749276.61        7.96811
        371421.37    3749245.53       22.92066                     371456.73    3749248.12       22.84848
        371549.94    3749046.97       41.88418                     371572.78    3749031.86       17.07426
        371600.80    3749031.43       10.96661                     371600.76    3749061.21       20.91332
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Onsite Model Output – Unit Emission Rates (1 g/s)

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: HAUL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,
L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC		X-COORD (M)	Y-COORD (M)	CONC
371440.08	3749135.17	0.69621		371465.08	3749131.72	0.74577
371489.65	3749131.29	0.79629		371514.65	3749131.29	0.86433
371540.94	3749131.29	0.96642		371529.68	3749003.95	2.31170
371590.08	3749138.62	1.30459		371573.64	3749061.36	1.57153
371451.45	3749018.62	1.94039		371482.49	3749018.62	1.91149
371440.08	3749155.85	0.61803		371464.65	3749154.99	0.65885
371490.08	3749153.70	0.71584		371514.65	3749154.99	0.78051
371540.08	3749152.83	0.88787		371528.82	3748971.97	3.82402
371590.08	3749156.29	1.25020		371449.32	3748987.94	3.02148
371640.08	3749160.17	2.34249		371662.06	3749160.17	3.68398
371439.22	3749184.74	0.53121	Onsite HS MER	371464.22	3749175.24	0.59654
371489.65	3749175.24	0.64982		371513.35	3749176.54	0.71274
371540.51	3749175.24	0.82401		371441.63	3749110.06	0.81796
371590.08	3749179.13	1.18557		371488.17	3749200.71	0.58242
371649.58	3749197.69	2.64974		371665.08	3749185.17	3.86489
371626.56	3749061.25	2.38019		371658.46	3749062.11	3.90103
371626.05	3749031.03	2.68386		371511.63	3749204.56	0.63789
371540.94	3749203.26	0.75660		371566.37	3749205.42	0.90243
371590.94	3749205.85	1.12535		371616.37	3749205.42	1.51427
371657.35	3749031.03	4.05942		371665.08	3749210.17	3.77964
371421.09	3749302.08	0.30827		371454.72	3749301.21	0.34862
371420.15	3749273.16	0.33806		371455.08	3749276.61	0.37872
371421.37	3749245.53	0.38199		371456.73	3749248.12	0.42481
371549.94	3749046.97	1.58163		371572.78	3749031.86	1.92385
371600.80	3749031.43	2.21203		371600.76	3749061.21	1.86209

Onsite Model Output – Unit Emission Rates (1 g/s)

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 , L0000001 , L0000002 , L0000003 , L0000004 ,
L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 ,
L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 ,
L0000021 , L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC		X-COORD (M)	Y-COORD (M)	CONC
371440.08	3749135.17	27.76444		371465.08	3749131.72	21.67190
371489.65	3749131.29	19.40784		371514.65	3749131.29	18.97670
371540.94	3749131.29	21.83563		371529.68	3749003.95	13.06862
371590.08	3749138.62	28.99567		371573.64	3749061.36	35.24492
371451.45	3749018.62	16.51809		371482.49	3749018.62	19.65916
371440.08	3749155.85	48.94619		371464.65	3749154.99	33.99514
371490.08	3749153.70	24.71773		371514.65	3749154.99	20.98317
371540.08	3749152.83	19.50085		371528.82	3748971.97	9.00550
371590.08	3749156.29	18.65460		371449.32	3748987.94	10.54903
371640.08	3749160.17	17.32430		371662.06	3749160.17	16.91420
371439.22	3749184.74	125.87447	Onsite HS MER	371464.22	3749175.24	56.23070
371489.65	3749175.24	33.77593		371513.35	3749176.54	25.04193
371540.51	3749175.24	19.85979		371441.63	3749110.06	23.73993
371590.08	3749179.13	15.63404		371488.17	3749200.71	42.34285
371649.58	3749197.69	13.43306		371665.08	3749185.17	14.39582
371626.56	3749061.25	18.79035		371658.46	3749062.11	15.60615
371626.05	3749031.03	12.00363		371511.63	3749204.56	29.25755
371540.94	3749203.26	21.35780		371566.37	3749205.42	17.85782
371590.94	3749205.85	15.70886		371616.37	3749205.42	14.21673
371657.35	3749031.03	11.08233		371665.08	3749210.17	13.85358
371421.09	3749302.08	15.64262		371454.72	3749301.21	14.45798
371420.15	3749273.16	19.71933		371455.08	3749276.61	17.95821
371421.37	3749245.53	34.18396		371456.73	3749248.12	31.93948
371549.94	3749046.97	45.75723		371572.78	3749031.86	20.82263
371600.80	3749031.43	14.79432		371600.76	3749061.21	24.76743

Onsite Model Output – Unit Emission Rates (1 g/s)

*** MODELOPTs: NonDFAULT CONC FLAT and ELEV FASTALL URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43848 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
		Onsite High School MER Location		
LIGHTING	1ST HIGHEST VALUE IS	12.43869 AT (371440.08, 3749135.17, 53.43, 53.43, 0.00)	DC	
	2ND HIGHEST VALUE IS	11.69005 AT (371441.63, 3749110.06, 53.17, 53.17, 0.00)	DC	
	3RD HIGHEST VALUE IS	11.29383 AT (371421.09, 3749302.08, 49.36, 53.02, 0.00)	DC	
	4TH HIGHEST VALUE IS	11.15087 AT (371420.15, 3749273.16, 52.92, 52.92, 0.00)	DC	
	5TH HIGHEST VALUE IS	10.88131 AT (371421.37, 3749245.53, 53.32, 53.32, 0.00)	DC	
	6TH HIGHEST VALUE IS	10.23042 AT (371440.08, 3749155.85, 53.69, 53.69, 0.00)	DC	
	7TH HIGHEST VALUE IS	9.96086 AT (371454.72, 3749301.21, 48.68, 53.02, 0.00)	DC	
	8TH HIGHEST VALUE IS	9.61138 AT (371455.08, 3749276.61, 52.01, 52.01, 0.00)	DC	
	9TH HIGHEST VALUE IS	8.75752 AT (371439.22, 3749184.74, 53.78, 53.78, 0.00)	DC	
	10TH HIGHEST VALUE IS	8.66619 AT (371456.73, 3749248.12, 53.25, 53.25, 0.00)	DC	
		Onsite High School MER Location		
FMP	1ST HIGHEST VALUE IS	116.58574 AT (371439.22, 3749184.74, 53.78, 53.78, 0.00)	DC	
	2ND HIGHEST VALUE IS	48.10671 AT (371464.22, 3749175.24, 53.83, 53.83, 0.00)	DC	
	3RD HIGHEST VALUE IS	41.88418 AT (371549.94, 3749046.97, 51.49, 51.49, 0.00)	DC	
	4TH HIGHEST VALUE IS	38.09773 AT (371440.08, 3749155.85, 53.69, 53.69, 0.00)	DC	
	5TH HIGHEST VALUE IS	34.96613 AT (371488.17, 3749200.71, 53.64, 53.64, 0.00)	DC	
	6TH HIGHEST VALUE IS	31.40663 AT (371573.64, 3749061.36, 51.96, 51.96, 0.00)	DC	
	7TH HIGHEST VALUE IS	26.61260 AT (371489.65, 3749175.24, 53.83, 53.83, 0.00)	DC	
	8TH HIGHEST VALUE IS	25.23222 AT (371464.65, 3749154.99, 53.81, 53.81, 0.00)	DC	
	9TH HIGHEST VALUE IS	24.23044 AT (371590.08, 3749138.62, 53.33, 53.33, 0.00)	DC	
	10TH HIGHEST VALUE IS	22.92066 AT (371421.37, 3749245.53, 53.32, 53.32, 0.00)	DC	
HAUL	1ST HIGHEST VALUE IS	4.05942 AT (371657.35, 3749031.03, 48.24, 48.24, 0.00)	DC	
	2ND HIGHEST VALUE IS	3.90103 AT (371658.46, 3749062.11, 49.25, 49.25, 0.00)	DC	
	3RD HIGHEST VALUE IS	3.86489 AT (371665.08, 3749185.17, 52.81, 52.81, 0.00)	DC	
	4TH HIGHEST VALUE IS	3.82402 AT (371528.82, 3748971.97, 47.06, 47.06, 0.00)	DC	
	5TH HIGHEST VALUE IS	3.77964 AT (371665.08, 3749210.17, 53.40, 53.40, 0.00)	DC	
	6TH HIGHEST VALUE IS	3.68398 AT (371662.06, 3749160.17, 51.95, 51.95, 0.00)	DC	
	7TH HIGHEST VALUE IS	3.02148 AT (371449.32, 3748987.94, 47.49, 47.49, 0.00)	DC	
	8TH HIGHEST VALUE IS	2.68386 AT (371626.05, 3749031.03, 48.49, 48.49, 0.00)	DC	
	9TH HIGHEST VALUE IS	2.64974 AT (371649.58, 3749197.69, 52.96, 52.96, 0.00)	DC	
	10TH HIGHEST VALUE IS	2.38019 AT (371626.56, 3749061.25, 50.11, 50.11, 0.00)	DC	
		Onsite High School MER Location		
ALL	1ST HIGHEST VALUE IS	125.87447 AT (371439.22, 3749184.74, 53.78, 53.78, 0.00)	DC	
	2ND HIGHEST VALUE IS	56.23070 AT (371464.22, 3749175.24, 53.83, 53.83, 0.00)	DC	
	3RD HIGHEST VALUE IS	48.94619 AT (371440.08, 3749155.85, 53.69, 53.69, 0.00)	DC	

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         4TH HIGHEST VALUE IS      45.75723 AT (  371549.94,  3749046.97,    51.49,    51.49,    0.00)  DC
         5TH HIGHEST VALUE IS      42.34285 AT (  371488.17,  3749200.71,    53.64,    53.64,    0.00)  DC
         6TH HIGHEST VALUE IS      35.24492 AT (  371573.64,  3749061.36,    51.96,    51.96,    0.00)  DC
         7TH HIGHEST VALUE IS      34.18396 AT (  371421.37,  3749245.53,    53.32,    53.32,    0.00)  DC
         8TH HIGHEST VALUE IS      33.99514 AT (  371464.65,  3749154.99,    53.81,    53.81,    0.00)  DC
         9TH HIGHEST VALUE IS      33.77593 AT (  371489.65,  3749175.24,    53.83,    53.83,    0.00)  DC
        10TH HIGHEST VALUE IS      31.93948 AT (  371456.73,  3749248.12,    53.25,    53.25,    0.00)  DC


*** RECEPTOR TYPES:  GC = GRIDCART
                     GP = GRIDPOLR
                     DC = DISCCART
                     DP = DISCPOLR
```

```
*** AERMOD - VERSION 21112  ***   *** Mira Costa HS Project                                   ***        10/21/25
*** AERMET - VERSION  16216 ***   *** Construction HRA                                        ***        09:33:51
                                                                                                        PAGE 113
*** MODELOPTs:    NonDFAULT  CONC  FLAT and  ELEV  FASTALL  URBAN  ADJ_U*

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            2 Warning Message(s)
A Total of         1474 Informational Message(s)

A Total of        43848 Hours Were Processed

A Total of         1223 Calm Hours Identified

A Total of          251 Missing Hours Identified (  0.57 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
ME W186    1496       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
ME W187    1496       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

   ***********************************
   *** AERMOD Finishes Successfully ***
   ***********************************
```

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APPENDIX D:
BIOLOGICAL RESOURCES REPORT



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BIOLOGICAL RESOURCE EVALUATION
FOR
MANHATTAN BEACH UNIFIED SCHOOL DISTRICT
MIRA COSTA HIGH SCHOOL PROJECT

Prepared for:

PLACEWORKS
3 MacArthur Place, Suite 1100
Santa Ana, California 92707

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(949) 680-4400

HANA RESOURCES™
Environmental Enterprise Solutions

December 8, 2025

CERTIFICATION STATEMENT

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

December 8, 2025
Date

R. Austin Isakson

R. Austin Isakson
Associate Biologist

December 8, 2025
Date

Jose Olvera

Jose Olvera
Associate Biologist

TABLE OF CONTENTS

TABLE OF CONTENTS I

SECTION 1. INTRODUCTION 1

1.1. PROJECT LOCATION 1
1.2. PROJECT DESCRIPTION 1

SECTION 2. REGULATORY OVERVIEW 5

2.1. FEDERAL STATUTES, REGULATIONS AND EXECUTIVE ORDERS 5
2.2. STATE STATUTES AND REGULATIONS 7
2.3. REGIONAL AND LOCAL ORDINANCES, PLANS AND POLICIES 8

SECTION 3. METHODOLOGY 10

3.1. LITERATURE REVIEW 10
3.1.1. Soils 10
3.1.2. USACE, SWRQCB, and CDFG Preliminary Jurisdictional Assessment 10
3.1.3. Wetlands 10
3.1.4. Critical Habitat, HCPs, and NCCPs 10
3.1.5. Sensitive Vegetation Communities 11
3.1.6. Special Status Plants & Wildlife 11
3.1.7. Potential for Occurrence 11
3.1.7.1. Status Codes 12
3.2. BIOLOGICAL RECONNAISSANCE-LEVEL SURVEY 13
3.2.1. Vegetation 13
3.2.2. Wildlife 13

SECTION 4. RESULTS 14

4.1. LITERATURE REVIEW 14
4.1.1. Soils 14
4.1.2. USACE, SWRQCB, and CDFG Preliminary Jurisdictional Assessment 14
4.1.3. Wetlands 14
4.1.4. Critical Habitat, HCPs, and NCCPs 17
4.2. POTENTIAL FOR OCCURRENCE 17
4.2.1. Sensitive Vegetation Communities 19
4.2.2. Special Status Plants & Wildlife 19
4.2.3. Potential for Occurrence 20
4.2.3.1. Plants 20
4.2.3.2. Wildlife 28
4.3. BIOLOGICAL RECONNAISSANCE SURVEY 33
4.3.1. Vegetation 33
4.3.1.1. Vegetation Communities Descriptions 33
4.3.1.2. Sensitive Natural Communities 35
4.3.2. Plant Species 35
4.3.2.1. General 35
4.3.2.2. Special-Status Species 35

4.3.3. Wildlife 35
4.3.3.1. General 35
4.3.3.2. Sensitive Wildlife Species 36

SECTION 5. CONCLUSIONS AND RECOMMENDATIONS 38

5.1. WETLANDS 38
5.2. CRITICAL HABITAT, HCPS, AND NCCPS 38
5.3. VEGETATION COMMUNITIES 38
5.4. PLANTS 39
5.5. WILDLIFE 39

SECTION 6. REFERENCES 41

EXHIBITS

Exhibit I: Project Vicinity 2
Exhibit II: Project Area 3
Exhibit III: Site Plan 4
Exhibit IV. Wetlands 16
Exhibit V. Special-Status Species within 2-Miles of Site Location 18
Exhibit VI: Vegetation Communities 34

TABLES

Table 1. Criteria for Evaluating Special-Status Species Occurrences 12
Table 2. Abbreviations for Federal- and State-listed Special-status Species 12
Table 3. National Wetland Inventory Results 15
Table 4. Special-Status Plant Species 20
Table 6. Special-Status Wildlife Species 28

APPENDICES

APPENDIX A - Site Photographs
APPENDIX B - Biological Reconnaissance Survey Field Forms
APPENDIX C - Plant & Wildlife Species Observed/Detected Onsite
APPENDIX D - USDA Natural Resources Conservation Service Web Soil Survey

SECTION 1. INTRODUCTION

HANA Resources, Inc. (HANA) was retained by PlaceWorks to prepare this Biological Resources Evaluation (BRE) Report for the proposed Manhattan Beach Unified School District Mira Costa High School Project. Following completion of the reconnaissance-level biological evaluation, HANA prepared this BRE that: 1) summarized existing conditions; 2) assessed the potential presence of sensitive biological resources; 3) analyzed the potential impacts on those resources from project development; 4) recommended, as appropriate, best management practices (BMPs), avoidance and protection measures, and mitigation measures to avoid, eliminate and/or reduce environmental impacts to less than significant levels; and 5) identified biological permits or approvals that the project may need. The BRE includes: 1) methods and results of the literature review and field surveys; 2) figures depicting the size and location of plant communities and other sensitive biological resources; 3) a complete flora and fauna compendium; and 4) site photographs.

1.1. Project Location

The site covers approximately 40 acres of Los Angeles County, CA (**Exhibit I,** *Project Vicinity*) and is located at 1401 Artesia Boulevard, Manhattan Beach, California 90266, immediately northwest of the intersection of Artesia Boulevard and South Peck Avenue; it is located on APN 4168-002-906 (**Exhibit II,** *Project Area*). The site is located on the United States Geological Survey (USGS) Redondo Beach and Venice Quadrangle, 7.5-Minute Topographic map. The surface elevation of the site ranges from approximately 140 to 185 feet above mean sea level (MSL). The site is located within Section 30 in Township 3 South-Range 14 West, San Bernardino Meridian.

1.2. Project Description

The proposed project would replace existing field lights at the Waller Football Stadium in the northeast quadrant of the campus; install new field lights at the West Field in the northwest quadrant of the campus; and install new field lights on the softball/baseball fields in the southwest quadrant of the campus. As presented in the site plan provided by the Manhattan Beach Unified School District, proposed project activities would notably take place across various areas of the campus (**Exhibit III**, *Site Plan*). The project would also include the installation of two e-bike parking areas and improvements identified in the District's Mira Costa High School Facilities Master Plan, which include demolition, new construction, modernization, and renovation of buildings and facilities on campus. Based on the provided site plan, the total area assessed for HANA's site visit and BRE was designated as the Biological Survey Area (BSA), which encompassed the proposed project footprint and a 500-foot buffer.

Exhibit I: Project Vicinity

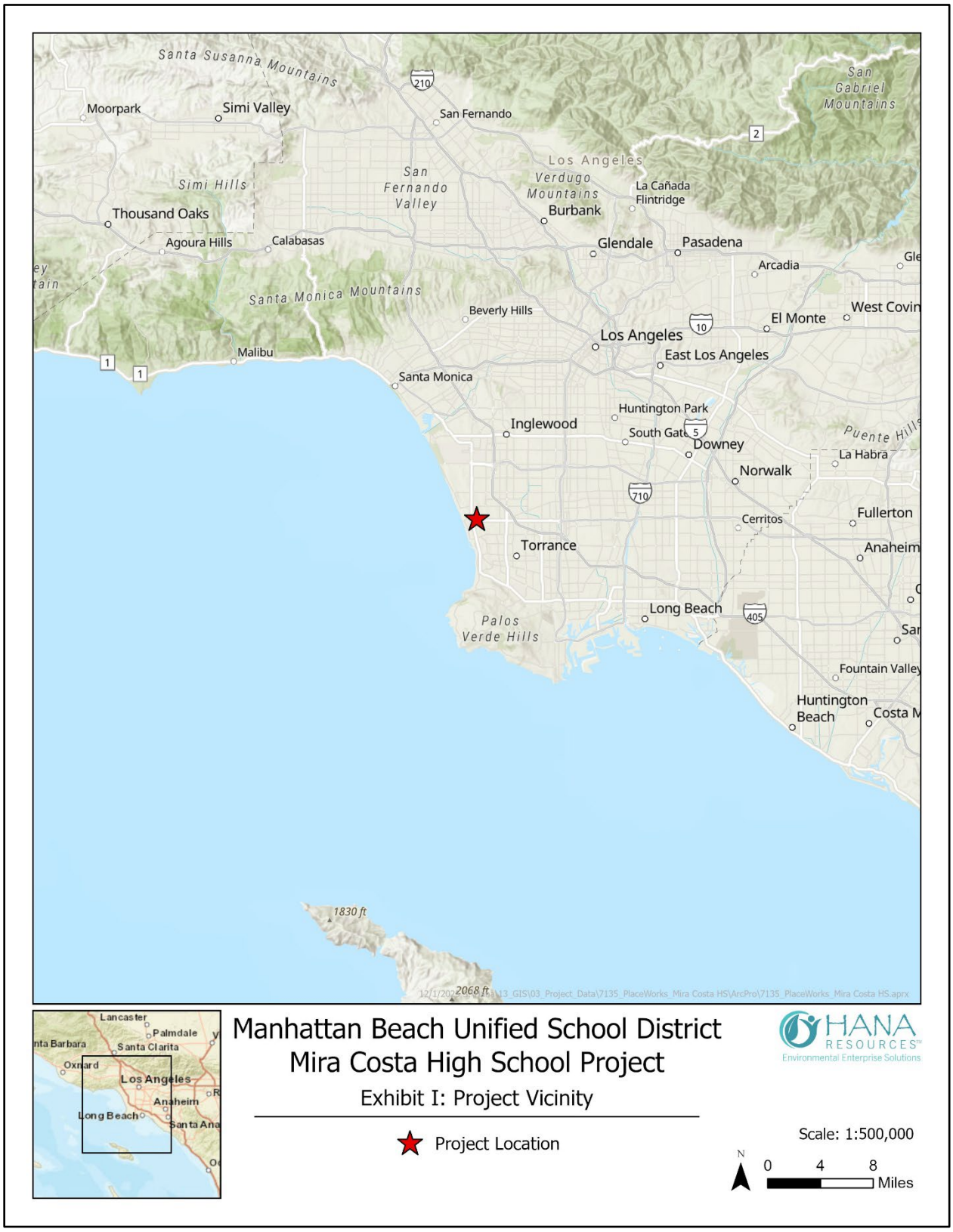
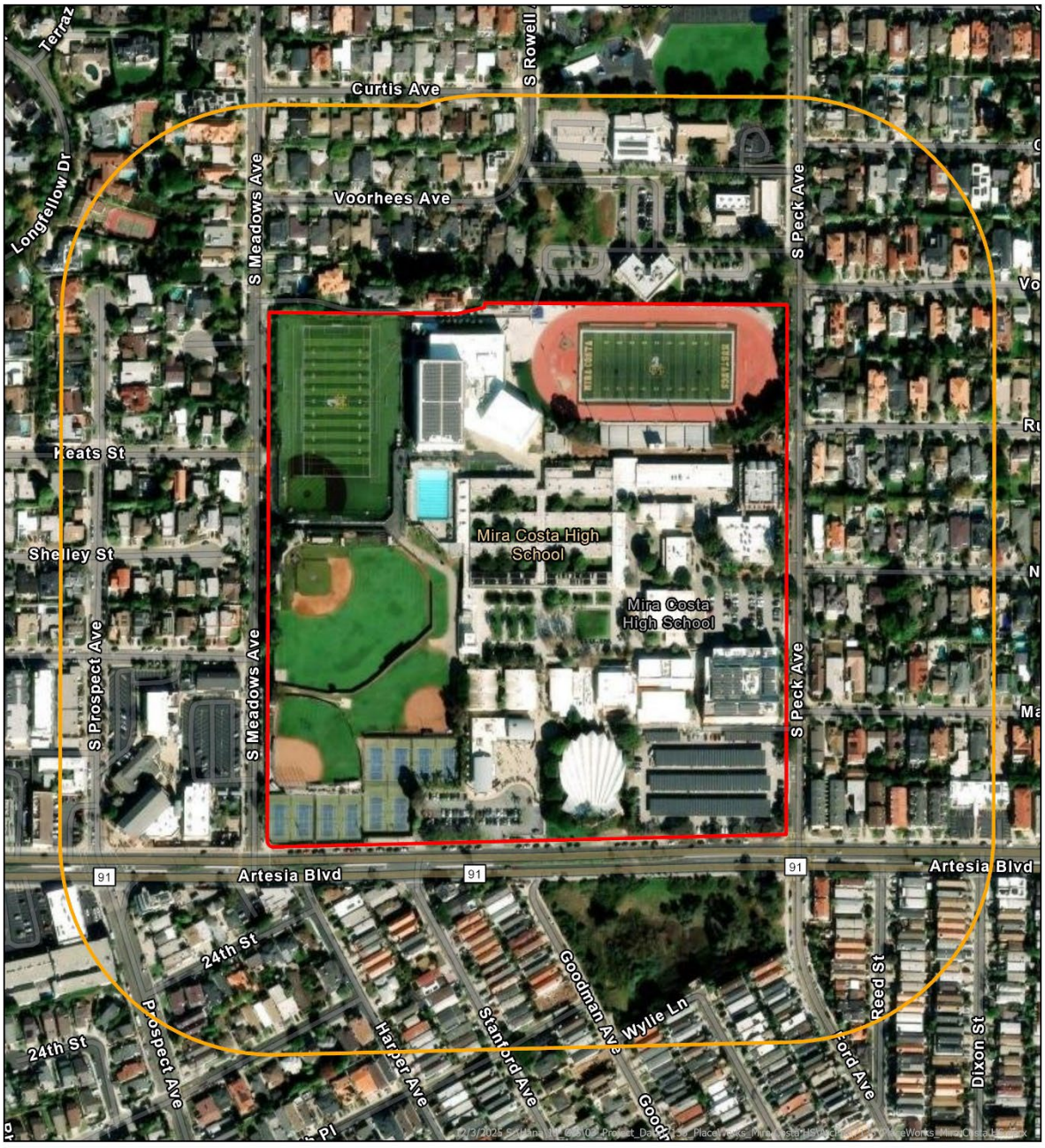


Exhibit II: Project Area





Manhattan Beach Unified School District
Mira Costa High School Project

Exhibit II: Project Area

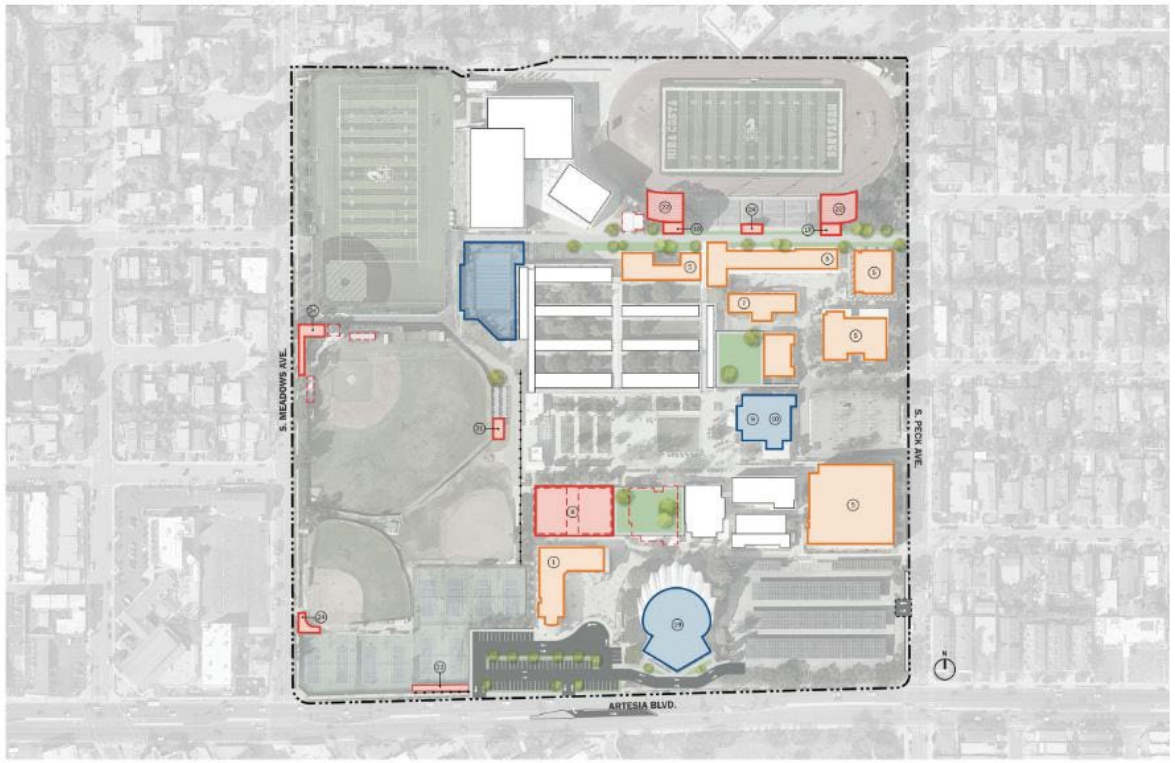
Project Area
500-ft Project Buffer

HANA RESOURCES
Environmental Enterprise Solutions

Scale: 1:3,750

N
0 155 310
Feet

Exhibit III: Site Plan



SECTION 2. REGULATORY OVERVIEW

2.1. Federal Statutes, Regulations and Executive Orders

Endangered Species Act (ESA)

The federal ESA of 1973 (Title 16, United States Code [U.S.C.] §§ 1531-1543), as amended, designates and provides for protection of listed threatened and endangered plant and animal species, and their critical habitat. The US Fish and Wildlife Service (USFWS), in the Department of the Interior (DOI), and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), in the Department of Commerce (DOC), share responsibility for administration of the ESA. These responsibilities include listing and delisting species, designating critical habitat, and formulating recovery plans. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife.

Section 9 (Prohibited Acts)

Once a species is listed, section 9 of the ESA makes it unlawful for any person, including private and public entities, to "take" species listed as endangered or without a permit issued pursuant to section 10 or an incidental take statement issued pursuant to section 7. Section 9 defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." The term "harm" is defined as "an act which actually kills or injures wildlife. Such an act may include substantial habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."

ESA section 9's take prohibitions apply to listed wildlife and fish species, but not to plants. Endangered plants are not protected from take, although it is unlawful to remove, possess, or maliciously damage or destroy them on federal lands. Removing or damaging listed plants on state and private lands in knowing violation of state law, or in the course of violating a state criminal trespass law, also is illegal under the ESA.

Section 10 (Incidental Take Permits and Habitat Conservation Plans)

An incidental take permit pursuant to section 10(a)(1)(B) is required when non-Federal, otherwise lawful activities, including lawful project development, will result in take of threatened or endangered wildlife. Under this provision, the USFWS and/or NMFS may, where appropriate, authorize the taking of federally listed wildlife or fish if such taking occurs incidentally during otherwise legal activities. Section 10(a)(2)(B) requires an application for an incidental take permit to include a Habitat Conservation Plan (HCP). The purpose of the habitat conservation planning process associated with the permit is to ensure there is adequate avoidance, minimization, and mitigation measures to address the effects of the authorized incidental take. Section 10 provides a clear regulatory mechanism to permit the incidental take of federally listed fish and wildlife species by private interests and non-Federal governmental agencies.

Migratory Bird Treaty Act (MBTA)

The MBTA of 1918 (Title 16, U.S.C. sections 703 - 712), as amended, implements various treaties and conventions between the United States (U.S.) and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. The MBTA makes it unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg or any such bird, unless authorized under a permit issued by the Secretary of the Interior. Some regulatory

exceptions apply. Take is defined in regulations implementing the MBTA as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to carry out these activities." The MBTA prohibits the collection and destruction of a migratory bird, its nest, and birds or eggs contained in the nest. The USFWS' Migratory Bird Permit Memorandum (MBPM-2) dated April 15, 2003, clarifies that destruction of most unoccupied bird nests is permissible under the MBTA; exceptions include nests of federally listed threatened or endangered migratory birds, bald eagles, and golden eagles. Take under the MBTA does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The USFWS has statutory authority and responsibility for enforcing the MBTA.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC Section 668) provides for the protection of the bald eagle (the national emblem) and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession and commerce of such birds. If compatible with the preservation of bald and golden eagles, the Secretary of the Interior may permit the taking, possession and transportation of bald and golden eagles and nests for scientific or religious purposes, or for the protection of wildlife, agricultural or other interests. The Secretary of the Interior may authorize the take of golden eagle nests, which interfere with resource development or recovery operations. Bald eagles may not be taken for any purpose unless the Secretary issues a permit prior to the taking.

Clean Water Act (CWA)

The federal CWA (33 U.S.C. §§ 1251-1376) is the principal federal law governing pollution control and water quality of the nation's waterways. It establishes the basic structure for regulating discharges of pollutants into "Waters of the United States" (Waters of the U.S.) and for regulating water quality and establishing water quality standards for surface waters. Sections 401, 402, and 404 of the CWA are pertinent to surface and coastal Waters of the U.S. For purposes of Section 404 permitting under the CWA, "Waters of the U.S.", are comprised of those wetland and non-wetland bodies of water that meet the criteria set forth in 33 Code of Federal Regulations (CFR) § 328.3, as interpreted by a number of court opinions and guidance, including Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers (USACE), 531 U.S. 159 (2001) (SWANCC), consolidated cases Rapanos v. United States (Rapanos), and Carabell v. United States (Carabell), 547 U.S. 715 (2006), and joint guidance issued by USACE and United States Environmental Protection Agency (EPA) in light of judicial decisions, including the joint guidance memorandum regarding Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States and Carabell v. United States (December 12, 2008)(2008 Regulatory Guidance).

Section 404 – Discharge of Dredge and Fill Requirements

Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill material into Waters of the U.S. The USACE implementing regulations define "dredged material" as material that is excavated or dredged from Waters of the U.S. The CWA implementing regulations define "fill material" as material placed in Waters of the U.S. where the material has the impact of either replacing any portion of Waters of the U.S. with dry land or changing the bottom elevation of any portion of a Waters of the U.S. Examples include discharges of rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mining or other excavation activities, and materials used to create any structure or infrastructure for development projects in Waters of the U.S.

Section 401 – Water Quality Certification

Although the CWA is a federal law, Section 401 of that law recognizes that states have the primary authority and responsibility for setting surface water quality standards and requires the USACE to obtain

a state certification that their permits for discharge or dredge and fill material do not violate state water quality standards. Section 401 of the CWA requires every applicant for a Section 404 permit resulting in any discharge of dredge or fill material into Waters of the U.S. to provide a certification that any discharges will comply with the applicable state water quality standards set pursuant to the CWA and applicable state law.

2.2. State Statutes and Regulations

California Endangered Species Act (CESA)

CESA (California Fish and Game Code § 2050 et seq.) was enacted in 1984 to parallel the federal ESA and allows the California Fish and Game Commission to designate species, including plants, as "threatened" or "endangered." The CESA states that all native species of fishes, amphibians, reptiles, birds, mammals, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. Unlike the ESA, the CESA does not include listing provisions for invertebrate species.

CESA makes it illegal to import, export, take, possess, purchase, sell, or attempt to do any of those actions to species that are designated as threatened, endangered, or candidates for listing, unless permitted by the California Department of Fish and Wildlife (CDFW). Section 2080 of the California Fish and Game Code prohibits take of any species that the Commission determines to be an endangered species or a threatened species. "Take" is defined in section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

Under section 2081 of CESA, CDFW may permit take or possession of threatened, endangered, or candidate species for scientific, educational, or management purposes, and may also permit take of these species that is incidental to otherwise lawful activities if certain conditions are met. Some of the conditions for issuance of permits allowing incidental take are that the adverse effects of the take must be minimized and fully mitigated, adequate funding must be ensured for implementation of identified mitigation, and that the activity shall not jeopardize the continued existence of the listed species. CESA emphasizes early consultation to avoid potential impacts on candidate and listed endangered and threatened species, and to develop appropriate mitigation to offset project-caused losses of listed species populations and their essential habitats.

California Fish and Game Code §§ 1600-1616

Pursuant to §§ 1600–1616 of the California Fish and Game Code, the CDFW regulates all substantial diversions, obstructions, or changes to the natural flow or the bed, channel, or bank of any river, stream, or lake, which provides habitat and supports fish or wildlife. CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation" (California Code of Regulations, Title 14, Division 1, Subdivision 1, Chapter 1, § 1.72). "Bank" means the slope or elevation of land that bounds the bed of the stream in a permanent or longstanding way, and that confines the stream water up to its highest level. "Lake" includes "natural lakes or man-made reservoirs."

Rivers, streams, lakes, and riparian vegetation that provide habitat for fish and wildlife species are subject to jurisdiction by the CDFW under §§ 1600-1616 of the California Fish and Game Code. Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Section 2785(e) defines "riparian habitat" as lands which contain habitat which grows close to, and which depends upon soil moisture from

a nearby freshwater source. CDFW regulates the bed, bank to bank, as well as associated riparian vegetation, and fish and wildlife resources. CDFW has interpreted jurisdictional boundaries to be defined by the tops of stream banks (i.e., the limit of stream influence) and/or the limit of the canopy of riparian vegetation (outer drip line) that is hydrologically connected to river, stream, or lake, whichever is greatest. As a result, the area of CDFW jurisdiction is usually greater than the active channel and overlaps and extends beyond the USACE jurisdiction. Isolated wetlands not associated with a river, stream or lake are not protected under §§ 1600 et seq. of the California Fish and Game Code. In addition, CDFW does not have regulatory authority on Tribal Lands.

2.3. Regional and Local Ordinances, Plans and Policies

City of Manhattan Beach Municipal Code

Municipal Code Chapter 7.32.100 – Protection of trees

> "*During the erection, repair, alteration, or removal of any building, house, structure, or street in the City, any person, firm, association, corporation or franchisee in charge of such work shall protect any tree, shrub or plant in any street, park, boulevard, or public place in the vicinity of such building or structure with sufficient guards or protectors as shall prevent injury to said tree, shrub or plant arising out of or by reason of said erection, repair, alteration or removal, and shall be held responsible for replacing the tree if the Public Works Director determines that this protection has not been provided."*

Municipal Code Chapter 10.52.120 – Tree Preservation and restoration in residential zones, Area Districts I and II

> Protected trees are defined as "*…any species of tree, (excluding deciduous fruit-bearing trees and Washingtonia species palms) the trunk of which is located at least partially within the required front yard or streetside yard (on corner lots) of a site, with a trunk diameter of twelve inches (12") or greater or multiple trunks totaling twelve inches (12") in diameter or greater at a height of four and one-half feet (4.5') from existing grade; and any replacement tree required pursuant to this section.*"

General Requirements include:

1. Except as provided in subsection H (Exemptions), no person shall directly or indirectly remove or cause to be removed, or relocate any protected tree as herein defined, from residentially zoned properties within Area Districts I and II, without first obtaining a permit to do so in accordance with the procedures set forth in this section.
2. No person shall directly or indirectly neglect, abuse, damage, mutilate, injure or harm any protected tree as herein defined, from residentially zoned properties within Area Districts I and II.

If project activities require the removal, relocation, or replacement of a protected tree, then a tree permit is required. Additionally, "any tree which is adjacent to the subject property and may be potentially impacted by construction activity on the subject property shall be protected pursuant to the provisions of this chapter. No grading or construction, including structures, paving, and walls, that disrupts the root system on private as well as public property, shall be permitted without prior approval by the Community Development Director. As a guideline, no cutting of roots over two inches (2") in diameter should occur

within the drip line of the tree as measured at ground level. Where some root removal is necessary as approved by the City the tree crown may require thinning to prevent wind damage."

City of Manhattan Beach Urban Forest Master Plan

As relayed within the City's Urban Forest Master Plan (City of Manhattan Beach, 2019), "When applying for a building permit, a tree permit/acknowledgement and plan […] are required if protected trees are located on the property. A tree permit is required if the proposed project may impact existing trees in the front or streetside yard of the subject property even though removal is not planned. […], a fee is associated with the tree permit."

SECTION 3. METHODOLOGY

3.1. Literature Review

3.1.1. Soils

Soil maps for the site were referenced online to determine the types of soil found on the site from the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2025). Soils are determined in accordance with categories set forth by the U.S. Department of Agriculture (USDA) Soil Conservation Service and by referencing the USDA NRCS Web Soil Survey (USDA 2025).

3.1.2. USACE, SWRQCB, and CDFG Preliminary Jurisdictional Assessment

Prior to beginning the field preliminary delineation, a 50-foot-to-the-inch scaled topographic map, scaled aerial photograph, and Redondo Beach and Venice 7.5-minute USGS topographic quadrangle map were examined to determine the locations of potential areas of USACE, California State Water Resources Quality Control Board (SWRQCB), and/or California Department of Fish and Game (CDFG) jurisdiction. HANA biologists examined the BSA to identify potential USACE jurisdiction pursuant to Section 404 and 401 of the Clean Water Act and CDFG jurisdiction pursuant to Section 1602 of the State of California Fish and Game Code.

3.1.3. Wetlands

The project boundary and its 500-foot buffer were referenced online to determine presence or absence of wetlands through USFWS's Natural Wetland Inventory (NWI) Wetland Mapper (USFWS 2025a). The USFWS is the principal federal agency tasked with monitoring and providing information on the extent, status, characteristics, and functions of the country's wetlands, deepwater, and other aquatic habitats (USFWS 2025a). This inventory follows the national standard definition of wetlands as outlined in Cowardin et al. 2nd edition (2013). Wetlands are then categorized based upon landscape, substrate, vegetation cover, and hydrologic regime and is known as the Cowardin system (Cowardin et al. 2013).

3.1.4. Critical Habitat, HCPs, and NCCPs

The project boundary and its 500-foot buffer were reviewed to determine the presence of USFWS-designated critical habitat, as well as inclusion within any approved or pending Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs). The USFWS's Environmental Conservation Online System (ECOS) was checked for the most current spatial data regarding Threatened and Endangered Species Final Critical Habitat that may overlap the BSA (USFWS 2025b). Critical habitat consists of areas containing physical or biological features essential for the conservation of threatened or endangered species and is designated by the USFWS pursuant to the federal Endangered Species Act.

In addition, spatial data containing HCP and NCCP boundaries were referenced to determine whether the site is located within or near an approved or developing Habitat Conservation Plan or Natural Community Conservation Plan (NCCP). HCPs are planning tools prepared by non-federal entities—such as local governments, special districts, or private developers—and are reviewed and permitted by the USFWS (and, where applicable, NMFS) under Section 10 of the Endangered Species Act. These plans outline expected impacts to federally listed species and prescribe conservation measures to avoid, minimize, and

mitigate impacts to the maximum extent practicable. NCCPs are large-scale, ecosystem-based conservation programs administered by CDFW, often in coordination with the USFWS for species with overlapping federal jurisdiction. These plans are developed by regional stakeholders to protect natural communities, support long-term biodiversity conservation, and streamline environmental permitting for compatible development. The NCCP database was used to identify any applicable planning areas, determine potential regulatory requirements, and assess whether regional conservation measures apply to the BSA.

3.1.5. Sensitive Vegetation Communities

California Natural Diversity Database (CNDDB), managed by CDFW is referenced to determine if any sensitive vegetation communities are present on-site or in the area (CDFW 2025). Sensitive vegetation communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable. These communities may or may not receive legal protections or contain special-status plants or their habitat.

3.1.6. Special Status Plants & Wildlife

Prior to performing the field surveys, a desktop literature review was performed to review existing documentation relevant to the Biological Study Area (BSA). The BSA is defined as the site and a 500-foot buffer zone outside of but contiguous with the site. The most recent records of the Information for Planning and Consultation (IPaC) database, managed by USFWS (USFWS 2025); California Natural Diversity Database (CNDDB), managed by CDFW (CDFW 2025); and the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2025) were reviewed for the quadrangles containing the project area (Redondo Beach & Venice, California USGS 7.5 minute quadrangles) and surrounding the Survey Area (Inglewood, Torrance, San Pedro, Redondo Beach OE S; California USGS 7.5 minute quadrangles).

Additionally, established community and citizen science-based websites with occurrence data such as iNaturalist, eBird, and CalFlora were utilized to determine if species have modern occurrences documented within or near the BSA (iNaturalist 2025, eBird 2025, CalFlora 2025). These databases contain records of reported occurrences of federal- or state-listed as endangered or threatened species, proposed endangered or threatened species, former Federal Special of Concern (FSC), California Species of Special Concern (CSC), or otherwise special-status species or sensitive habitat that may occur within or in the immediate vicinity of the BSA.

3.1.7. Potential for Occurrence

A vegetation community or special-status species is considered to potentially occur in a BSA if its known geographic range includes part of the BSA or an adjacent USGS 7.5-minute quadrangle and/or if the general habitat or environmental conditions (e.g., soil type, etc.) required for the species are present. The criteria for evaluating the potential for occurrence (PFO) on a site is presented in **Table 1**, *Criteria for Evaluating Special-Status Species Occurrences*.

Table 1. Criteria for Evaluating Special-Status Species Occurrences

Potential for Occurrence	Criteria
Absent	Species was not observed during focused surveys conducted at an appropriate time for identification of the species and species is restricted to habitats or environmental conditions that do not occur within the site.
Low	Historical records for this species do not exist within the immediate vicinity of the site (approximately 5 miles), and/or habitats or environmental conditions needed to support the species are of poor quality.
Moderate	Either a historical record exists of the species within the immediate vicinity of the site (approximately 5 miles) and marginal habitat exists on the site, or the habitat requirements or environmental conditions associated with the species occur within the site, but no historical records exist within 5-miles of the site.
High	Both a historical record exists of the species within the site or its immediate vicinity (approximately 5 miles), and the habitat requirements and environmental conditions associated with the species occur within the site.
Present	Species was detected within the site at the time of the survey.

3.1.7.1. Status Codes

A list of abbreviations used to help determine the significance of biological resources potentially occurring in the BSA is provided in **Table 2**, *Abbreviations for Federal- and State-listed Special-status Species*.

Table 2. Abbreviations for Federal- and State-listed Special-status Species

Designation	Abbreviation	Explanation
Federal	**FE**	Federally listed; Endangered
	FT	Federally listed; Threatened
	FPE	Federally Proposed for listing as Endangered
	FPT	Federally Proposed for listing as Threatened
	BGEPA	Bald and Golden Eagle Protection Act
State	**SE**	State listed; Endangered
	ST	State listed; Threatened
	SCT	State Candidate for Threatened listing
	SCE	State Candidate for Endangered listing
	CDFW FP	Calif. Dept of Fish & Wildlife – Fully Protected
	CDFW SSC	Calif. Dept of Fish & Wildlife – Species of Special Concern
	RARE	State listed; Rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)
	SC-RARE	State Candidate for Rare listing
	SNC	State Natural Communities rarity ranking: 1-3 are considered sensitive, R is Rare
	BCC	Bird of Conservation Concern
CNPS CRPR	**List 1A**	Plants presumed to Extinct in California
	List 1B	Plants Rare and Endangered in California and throughout their range
	List 2	Plants Rare, Threatened or Endangered in California but more common elsewhere in their range
	List 3	Plants about which we need more information; a review list
	List 4	Plants of limited distribution; a watch list
CNPS CRPR Extensions	**0.1**	Seriously Endangered in California (greater than 80 percent of occurrences threatened/high degree and immediacy of threat)
	0.2	Fairly Endangered in California (20-80 percent of occurrences threatened)
	0.3	Not Very Endangered in California (less than 20 percent of occurrences threatened)

3.2. BIOLOGICAL RECONNAISSANCE-LEVEL SURVEY

The field survey was conducted within the BSA to identify any potential for occurrence of sensitive species, vegetation communities, or habitats to support sensitive wildlife species. This also includes vegetation mapping, plant identification, and opportunistic wildlife surveys. The survey was conducted by HANA Associate Biologist, Mr. Jose Olvera, on foot between 0630 and 1230 hours on November 19th, 2025. Photographs of the BSA were recorded to document existing conditions (**Appendix A,** *Site Photographs*). Weather conditions during the survey included temperatures ranging from approximately 55 to 60 degrees Fahrenheit, 0 percent cloud cover, no precipitation, and varying wind speeds of 3-5 mph. The Biological Reconnaissance Survey Field Forms can be found in **Appendix B**, *Biological Reconnaissance Survey Field Forms*.

3.2.1. Vegetation

Plant communities within the BSA were identified, qualitatively described, and mapped onto an aerial photograph. Plant communities were determined in accordance with the categories set forth in CNPS's Manual of California Vegetation Online (2025). Plant nomenclature follows that of *The Jepson Manual: Higher Plants of California* (Hickman 2012, Jepson 2025). A comprehensive list of the plant species observed during the survey is presented in **Appendix C**, *Plant & Wildlife Species Observed/Detected Onsite*.

3.2.2. Wildlife

All wildlife and wildlife signs observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded. Additional survey time was spent in those habitats most likely to be utilized by wildlife (undisturbed native habitat, wildlife trails, etc.) or in habitats with the potential to support state- and/or federal-listed or proposed listed species. Notes were made on the general habitat types, species observed, and the conditions of the site. Wildlife nomenclature follows those set forth by the Society for the Study of Amphibians and Reptiles (Nicholson, K.E. (ed.) 2025), Checklist of North American Birds (Chesser et al. 2025), and Revised Checklist of North American Mammals North of Mexico (Bradley et al. 2014). A list of the wildlife species observed during the site visit is included as **Appendix C**, *Plant & Wildlife Species Observed/Detected Onsite*.

SECTION 4. RESULTS

4.1. Literature Review

4.1.1. Soils

After review of the USDA NRCS Web Soil Survey (USDA 2025) (**Appendix D**, *USDA Natural Resources Conservation Service Web Soil Survey*), it was determined that the BSA is entirely composed of the following soil type:

Urban land-Abaft-Marina complex, 0 to 15 percent slopes
The Urban land-Abaft-Marina complex is split into three groups: Urban land soil, Abaft soil, and Marina soil. The complex has a mean annual precipitation of 13 to 14 inches and a mean annual temperature of 63°F. These soils can be found at elevations of 10 to 450 feet. Urban land soils have a very high runoff class and are not hydric. The Abaft soil is comprised of sand, and the parent material is discontinuous human-transported material over eolian sands. The Abaft soil has a somewhat excessively drained drainage class and is not classified as a hydric soil. The Marina soil is comprised of sandy loam, sand, and loamy sand, with the parent material being discontinuous human-transported material over eolian sands. This soil has a very low runoff class and is not classified as a hydric soil. Two additional minor components (5% each) of this complex include Garey soil and Abaft, loamy surface soil.

4.1.2. USACE, SWRQCB, and CDFG Preliminary Jurisdictional Assessment

No jurisdictional drainages/areas were found to be within the project area.

4.1.3. Wetlands

After review of the USFWS National Wetland Inventory's Wetland Mapper, two types of wetlands were identified within 500 feet of project boundaries, though none were identified within the project's proposed construction and plan improvement areas. A map that illustrates all documented wetlands as per the National Wetland Inventory is included in **Exhibit IV**, *Wetlands*.

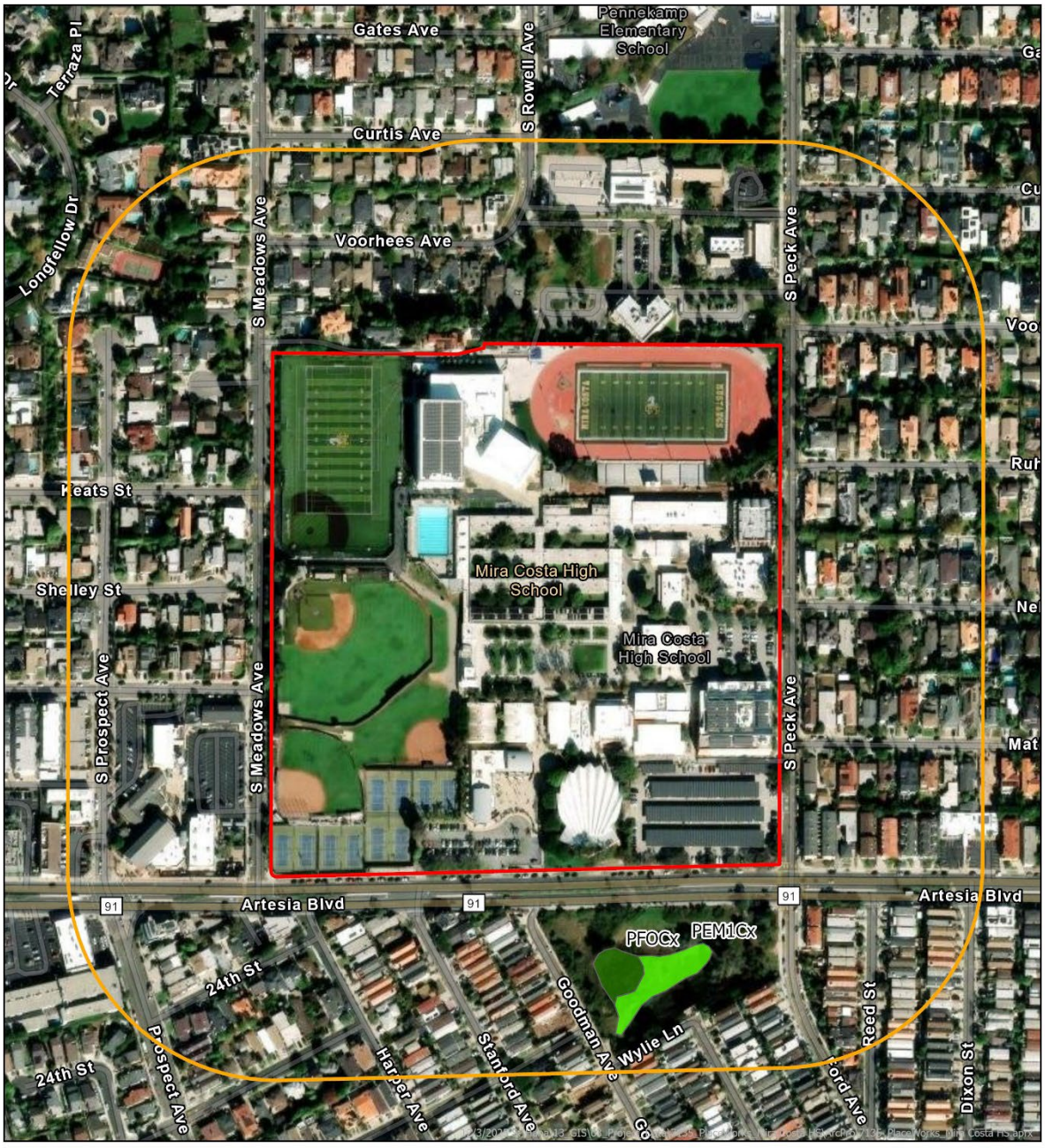
Relative to the project site, the two wetland types, PFOCx (0.25 acres) and PEM1Cx (0.42 acres), are located to the South of Mira Costa High School, across Artesia Blvd. According to the Redondo Beach General Plan, the wetlands are contained within a retention basin named "Wylie Sump" (City of Redondo Beach, 2024). Receiving stormwater from surrounding neighborhoods, Wylie Sump receives runoff from 38 acres of the City of Manhattan Beach, 20 acres of Hermosa Beach, and 73 acres of Redondo Beach (Beach Cities Watershed Management Group, 2018). Wylie Sump does not have an outlet and is otherwise closed to the public aside from viewing from outside fencing located on all sides of the sump, along the public right of way.

Descriptions of the wetland types found nearby, as indicated by the Wetland Mapper and classified according to the Cowardin system (Cowardin et al. 2013), are provided below:

Table 3. National Wetland Inventory Results

Cowardin Classification	Definition:
PFOCx	Palustrine (P): Wetlands within this system classification are nontidal, and are dominated by trees, shrubs, persistent emergent, and emergent mosses or lichens. Salinity in tidal wetlands within this classification is below 0.5ppt.
	Forested (FO): The Class Forested includes wetlands that are characterized as having woody vegetation that is 6 meters tall or higher.
	Seasonally Flooded (C): Surface water is present for extended periods (generally for more than a month) during the growing season but is absent by the end of the season in most years. When surface water is absent, the depth to substrate saturation may vary considerably among sites and among years.
	Excavated (x): This modifier indicates that a wetland basin or channel has been excavated by humans.
PEM1Cx	Palustrine (P): Wetlands within this system classification are nontidal, and are dominated by trees, shrubs, persistent emergent, emergent mosses or lichens. Salinity in tidal wetlands within this classification is below 0.5ppt.
	Emergent (EM): The Class Emergent includes wetlands characterized as having erect, rooted, herbaceous hydrophytes, excluding mosses and lichens.
	Persistent (1): This Subclass refers to the dominate vegetation being present until the start of the next growing season, under normal conditions.
	Seasonally Flooded (C): Surface water is present for extended periods (generally for more than a month) during the growing season but is absent by the end of the season in most years. When surface water is absent, the depth to substrate saturation may vary considerably among sites and among years.
	Excavated (x): This modifier indicates that a wetland basin or channel has been excavated by humans.

Exhibit IV. Wetlands



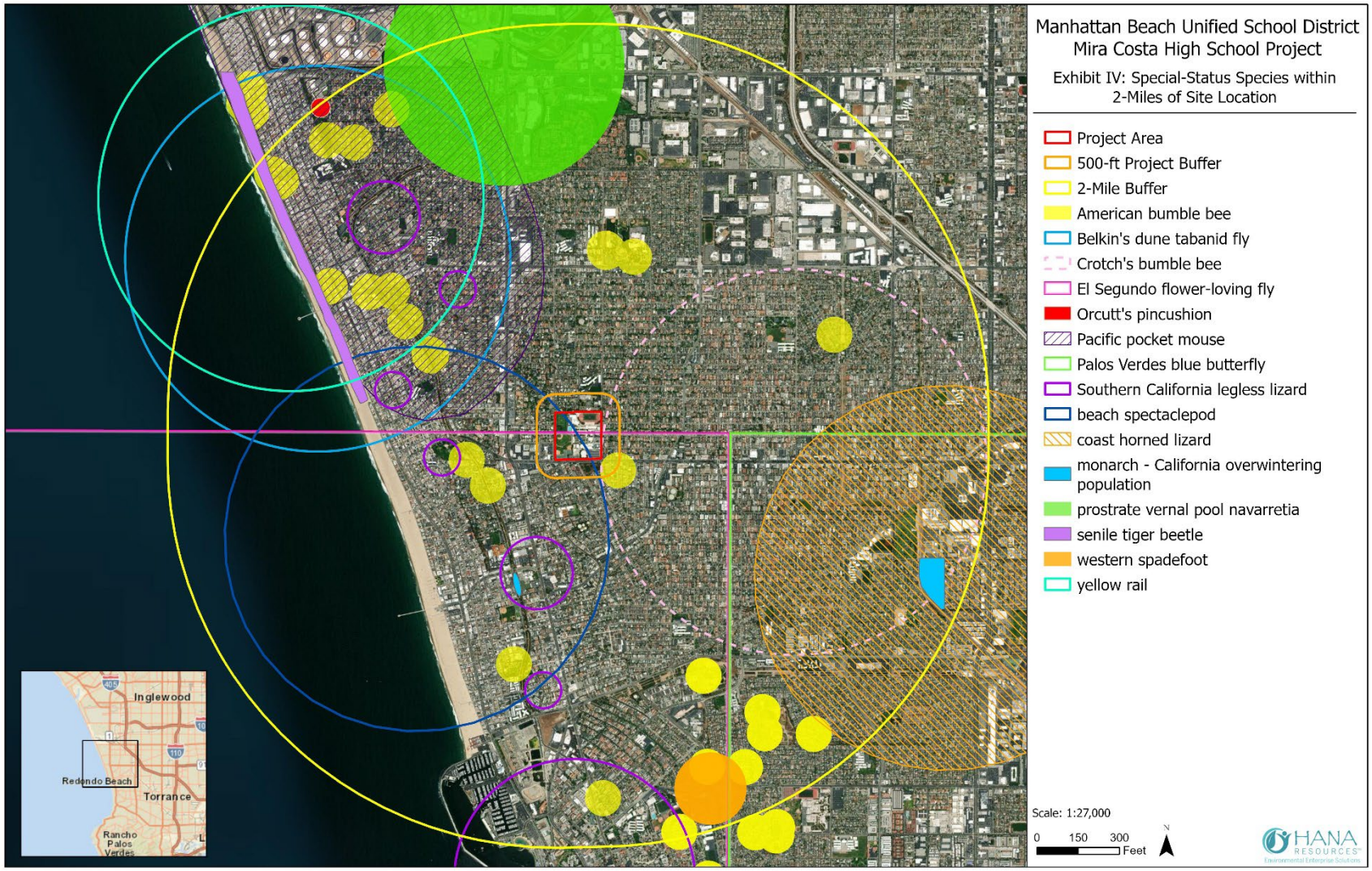
4.1.4. Critical Habitat, HCPs, and NCCPs

After overlaying the projects boundaries with ECOS's Threatened and Endangered Species Active Critical Habitat, USFWS's HCP boundaries, and CDFW's NCCP spatial data it was determined that no direct overlap occurs. While no HCP/NCCP's occur in the immediate area, the final critical habitat for the Western Snowy Plover is approximately one mile southwest of the project site along the coast.

4.2. Potential For Occurrence

A map of the CNDDB database occurrences is included in **Exhibit V,** *Special-Status Species within 2-Miles of Site Location*.

Exhibit V. Special-Status Species within 2-Miles of Site Location



4.2.1. Sensitive Vegetation Communities

The literature review found no sensitive vegetation communities within the two-mile area.

4.2.2. Special Status Plants & Wildlife

The literature review resulted in a list of forty-seven (47) special-status plant species that have been known to occur within the BSA and database search area (two-miles for IPAC and CNDDB, nine quads for CNPS RPI) presented in **Table 4**, *Special-Status Plant Species*. Of these forty-seven (47) species, two (2) have a low potential for occurrence and forty-five (45) have no potential to occur in the BSA. Factors used to determine potential for occurrence include quality of habitat, soil type, impact from previous land use, and the date and location of prior CNDDB, Jepson eFlora, and Calflora (Calflora 2025) occurrence records. Reconnaissance plant surveys were conducted to determine if they are present or absent from the BSA.

The literature review resulted in a list of ten (10) special-status wildlife species that have been known to occur within the BSA and surrounding two miles, which is presented in **Table 5**, *Special-Status Wildlife Species*. Of these ten (10) species, two (2) were considered to have moderate potential, two (2) were considered to have low potential, and six (6) had no potential to occur in the BSA. Factors used to determine potential for occurrence include quality of habitat, soil type, impact from previous land use, and the date and location of prior CNDDB occurrence records. Reconnaissance wildlife surveys will be conducted to determine if they are present or absent in the BSA.

4.2.3. Potential for Occurrence

4.2.3.1. Plants

Table 4. Special-Status Plant Species

Scientific Name	Common Name (=Synonym)	Status	Habitat Requirements	BSA Contains Potential Suitable Habitats	Plant Elevation Range (feet amsl)	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
						Elevation Range	General Distribution	
Listed Endangered, Threatened, Candidate and State Rare Plants: Plants with official status under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and/or the Native Plant Protection Act (NPPA). A species may have other sensitive designations in addition to their federal or state listing.								
Astragalus pycnostachyus var. lanosissimus	Ventura Marsh milk-vetch	FE, CE, CRPR:1B.1	Ventura marsh milk-vetch is a perennial herb that is found on coastal back dune habitat and the edges of coastal salt marshes, brackish marshes, coastal meadows and seeps. It is usually found within reach of high tide, or it is protected by barrier beaches. It is more rarely near seeps on sandy bluffs. This listed plant flowers from June to October.	No	5 - 115	No	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable habitat for this species, with modern occurrences (<20 years) being largely limited to Ventura and Santa Barbara County. Additionally, the BSA lies above the species' known elevation range
Astragalus tener var. titi	coastal dunes milk-vetch	FE, CE, CRPR:1B.1	Coastal dunes milk-vetch is an annual herb that is found in coastal bluff scrub and coastal dunes. This plant grows in moist depressions on clay soils in coastal terrace grasslands and in coastal strand vegetation on sand dunes. This listed plant flowers from March to May.	No	5 - 165	Yes	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable habitat for this species, with modern occurrences (<20 years) being largely limited to Monterrey County.
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	FE, CE, CRPR:1B.2	Salt marsh bird's-beak is an annual herb (hemiparasitic) that grows in portions of salt marshes subject to periodic inundation from high tides. Salt marsh bird's-beak grows in the higher reaches of coastal salt marshes to intertidal and brackish areas influenced by freshwater input. Some plants occur in non-tidal areas or in areas of perched water tables. It is parasitic on salt grass, alkali bulrush, cattail, and other individuals of its own species. This listed plant flowers from May to October.	No	0 - 100	No	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable habitat for this species, with the closest modern occurrences (<20 years) being largely limited to Ventura and Orange County. Additionally, the BSA lies above the species' known elevation range.
Eryngium aristulatum var. parishii	San Diego button-celery	FE, CE, CRPR:1B.1	San Diego button-celery is an annual/perennial herb that is restricted to vernal pools and vernally moist areas. It grows in vernal pools and moist clay depressions in poorly-drained adobe soil grasslands. It also grows in moist depressions surrounded by coastal scrub chaparral, and valley and foothill grasslands. It occurs almost always under natural conditions in wetlands. This listed plant flowers from April to June.	No	65 - 2035	Yes	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable habitat for this species, with the closest modern occurrences (<20 years) being largely limited to San Diego County.
Orcuttia californica	California Orcutt grass	FE, CE, CRPR:1B.1	California Orcutt grass is an annual herb that grows in three kinds of vernal pools (seasonally wet depressions with unique flora and fauna): terrace pools on marine terraces, volcanic mesa pools, and valley pools. Almost always occurs under natural conditions in wetlands. This listed plant flowers from April to August.	No	50 - 2165	Yes	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable habitat for this species, and there are no modern occurrences (<20 years) of this species nearby.
Pentachaeta lyonii	Lyon's pentachaeta	FE, CE, CRPR:1B.1	Lyon's pentachaeta is a perennial herb that is found in openings of chaparral, coastal sage scrub and valley and foothill grasslands. It is usually found at the ecotone between grasslands and chaparral or edges of firebreaks and access roads. This listed plant flowers from March to August.	No	100 - 2265	Yes	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable habitat for this species, with current modern occurrences (<20 years) being largely limited to the Santa Monica mountains. While historical occurrences are also documented in nearby Palos Verdes and San Pedro, lack of continuous habitat or corridor makes recruitment of this species very unlikely within the BSA.
Navarretia fossalis	spreading navarretia	FT, CRPR:1B.1	Spreading navarretia is an annual herb that grows in vernal pools, depressions and ditches in areas that once supported vernal pools in saline-alkaline soils. It can also be found in artificial roadside ditches. It has been found in alkaline or	No	100 - 2150	Yes	No	**No potential for occurrence within the BSA.** The BSA lacks suitable habitat for this species, with the closest modern occurrences (<20 years) being largely

Scientific Name	Common Name (=Synonym)	Status	Habitat Requirements	BSA Contains Potential Suitable Habitats	Plant Elevation Range (feet amsl)	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
						Elevation Range	General Distribution	
			saline scrubs (chenopod scrub) and playas, shallow freshwater marshes and swamps. This listed plant flowers from April to June.					limited to northern Los Angeles County, southern Orange County, Riverside County, and San Diego County.
Chorizanthe parryi var. fernandina	San Fernando Valley spineflower	CE, CRPR:1B.1	San Fernando Valley spineflower is an annual herb that grows in sandy and gravelly places associated with sandstone, sometimes in washes, typically in open areas associated with mixed grasslands, chaparral, and coastal sage scrub communities. This species was rediscovered in 1999. This listed plant flowers from April to July.	No	490 - 4005	No	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable habitat for this species, with the closest modern occurrences (<20 years) being largely limited to the Santa Clarita and San Fernando Valley. The BSA additionally lies outside of the species' known elevation range. While a historical sighting is documented near Venice Beach, lack of continuous habitat or corridor makes recruitment of this species very unlikely within the BSA.
Dithyrea maritima	beach spectaclepod	CT, CRPR:1B.1	Beach spectaclepod is a perennial rhizomatous herb that is found in sandy areas in coastal dunes or coastal scrub, particularly within small transverse foredunes. This plant is endemic to coastal habitats spanning from Central California down to Northern Baja California. Beach spectacle pod is usually found in areas of these fragile dunes where the sand is relatively unstable. This listed plant flowers from March to May.	No	10 - 165	Yes	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable coastal scrub or dune habitat to support this species. Recent modern occurrences (<20) are primarily limited to San Luis Obispo County, the Channel Islands, and Catalina Island.
Sensitive Plants: **These plants have no official status under the ESA, the CESA, and/or the NPPA; however they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations.**								
Abronia maritima	red sand-verbena	CRPR: 4.2	Red sand-verbena is a perennial herb that is found in coastal dunes. This sensitive plant flowers from February to November.	No	0 - 330	Yes	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable coastal dune habitat to support this species. There are no modern occurrences (<20 years) documented within 2 miles of the BSA.
Aphanisma blitoides	aphanisma	CRPR: 1B.2	Aphanisma is an annual herb that is found in sandy soils within coastal bluff scrub, coastal dunes, and coastal scrub. This sensitive plant flowers from March to June.	No	5 - 1000	Yes	Yes	**No potential for occurrence within the BSA.** While recent modern occurrences (<20 years) have been documented in nearby Palos Verdes, the BSA lacks suitable coastal bluff, scrub, and dune habitat to support this species.
Atriplex coulteri	Coulter's saltbush	CRPR:1B.2	Coulter's saltbush occurs along ocean bluffs in coastal bluff scrub; on coastal dunes; and on ridge tops, clay soils and alkaline low places in coastal scrub and valley and foothill grasslands. This sensitive plant flowers from March to October.	No	10 - 1510	Yes	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable coastal dune habitat and clay growing substrates to support this species. There are no modern occurrences (<20 years) of this species nearby.
Atriplex pacifica	south coast saltscale	CRPR:1B.2	South Coast saltscale is an annual herb that occurs on coastal bluff scrub, coastal dunes, coastal scrub, chenopod scrub and playas. Found in alkaline soils. This wiry little herb grows in xeric, often mildly disturbed locales. Usually the surrounding vegetation is an open Diegan sage scrub dominated by *Artemisia californica*; although, near the Bernasconi Hills it was found on alkaline flats in an area devoid of taller shrubs. This sensitive plant flowers from March to October.	No	0 - 460	Yes	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable coastal bluff scrub, dune, and playa habitat capable of supporting this species. While modern occurrences (<20 years) have been documented in nearby Redondo Beach and Palos Verdes, lack of continuous habitat or corridor limits species recruitment within the BSA.
Atriplex parishii	Parish's brittlescale	CRPR:1B.1	Parish's brittlescale is an annual herb that occurs within alkali vernal pools, alkali annual grasslands, alkali playa, and alkali chenopod scrub and alkali vernal plains. Usually found on drying alkaline flats with fine soils. This sensitive plant flowers from June to October.	No	80 - 6235	Yes	Yes	**No potential for occurrence within the BSA.** The BSA lacks alkali vernal pool, vernal playa, chenopod scrub, and vernal plain habitat capable of supporting this species.
Atriplex serenana var. davidsonii	Davidson's saltscale	CRPR:1B.2	Davidson's saltscale is an annual herb that is found in coastal bluff scrub and coastal scrub. In Riverside County, it is found in alkali vernal pools, alkali annual	No	35 - 655	Yes	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable coastal bluff and scrub habitat capable of supporting this species. There are no modern

Scientific Name	Common Name (=Synonym)	Status	Habitat Requirements	BSA Contains Potential Suitable Habitats	Plant Elevation Range (feet amsl)	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
						Elevation Range	General Distribution	
			grasslands, alkali playa, and alkali scrub components of alkali vernal plains. This sensitive plant flowers from April to October.					occurrences (<20 years) documented within 2 miles of the BSA.
Calystegia peirsonii	Peirson's morning-glory	CRPR: 4.2	Peirson's morning-glory is a perennial rhizomatous herb that is found in chaparral, chenopod scrub, cismontane woodlands, coastal scrub, lower montane coniferous forests, and valley and foothill grasslands. This species is a very weedy species, so some disturbance may even be beneficial. This sensitive plant flowers from April to June.	No	100 - 4920	Yes	No	**No potential for occurrence within the BSA.** The BSA lacks suitable coastal dune habitat to support this species. Additionally, this species is primarily endemic to the Santa Clarita and Antelope Valley within northern Los Angeles County.
Camissoniopsis lewisii	Lewis' evening-primrose	CRPR: 3	Lewis' evening-primrose is an annual herb that is found in sandy or clay soils within coastal bluff scrub, cismontane woodlands, coastal dunes, coastal scrub, and valley and foothill grasslands. This sensitive plant flowers from March to June.	No	0 - 985	Yes	Yes	**No potential for occurrence within the BSA.** The BSA lacks suitable coastal bluff scrub, dune, cismontane woodland, and grassland habitat in addition to sandy or clay soil growing substrates capable of supporting this species. Nearby occurrences are limited to Madrona Marsh in Torrance, CA, and scrub habitat located next to Dockweiler Beach. Lack of continuous habitat or corridor with these areas in addition to suitable habitat limits species recruitment within the BSA.
Centromadia parryi ssp. australis	southern tarplant	CRPR:1B.1	Southern tarplant is an annual herb that is found on the margins of marshes and swamps, and in vernally mesic sites within valley and foothill grasslands and vernal pools. This sensitive plant flowers from May to November.	Yes	0 - 1575	Yes	Yes	**Low potential for occurrence within the BSA.** The ability of this species to colonize disturbed habitat, such as along roadsides, empty lots, and drainages means colonization may be possible in certain areas of the BSA, such as the fringes of Wylie Sump that contain upland vegetation species. However, the closest modern occurrences for this species lie greater than 2 miles away from the BSA. The surrounding area is largely developed, resulting in limited opportunities for direct recruitment of this species.
Centromadia pungens ssp. laevis	smooth tarplant	CRPR: 1B.1	Smooth tarplant is an annual herb that occurs in a variety of alkaline soils within chenopod scrub, meadows and seeps, playas, riparian woodlands, and valley and foothill grasslands. This herb is also found in areas subject to human disturbances, such as ditches, along agricultural fields, and roadsides. This sensitive plant flowers from April to September.	Yes	0 - 2100	Yes	No	**No potential for occurrence within the BSA.** While the BSA contains disturbed habitat capable of supporting this species, its general distribution places it within Riverside County and San Diego County. There are no modern occurrences (<20 years) documented within 2 miles of the BSA.
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	CRPR: 1B.1	Orcutt's pincushion is an annual herb that is growing in sandy substrates in coastal bluff scrub and coastal dunes. This sensitive plant flowers from January to August.	No	0 - 330	Yes	Yes	**No potential for occurrence within the BSA.** While recent modern occurrences occur within 2 miles of the BSA, these are limited to areas with dedicated sand dune and coastal bluff habitat. The BSA does not contain suitable habitat capable of sustaining this species.
Chenopodium littoreum	coastal goosefoot	CRPR: 1B.2	Coastal goosefoot is an annual herb that can be found growing in coastal dunes. This sensitive plant flowers from April to August.	No	35 - 100	No	No	**No potential for occurrence within the BSA.** This species is endemic to the Central California coastline, within San Luis Obispo and Santa Barbara County.
Cistanthe maritima	seaside cistanthe	CRPR: 4.2	Seaside cistanthe is an annual herb that primarily grows in Southern California within coastal scrub, valley, and foothill grassland habitat. This moderately threatened plant flowers from March to June.	No	15 - 985	Yes	Yes	**No potential for occurrence within the BSA.** The closest modern occurrence is in the Palos Verdes Peninsula, greater than 2 miles away from the BSA. The BSA does not contain similar suitable habitat to support this species.

Scientific Name	Common Name (=Synonym)	Status	Habitat Requirements	BSA Contains Potential Suitable Habitats	Plant Elevation Range (feet amsl)	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
						Elevation Range	General Distribution	
Convolvulus simulans	small-flowered morning-glory	CRPR: 4.2	Small-flowered morning-glory is an annual herb that grows on friable clay soils which are typically devoid of shrubs, in openings in chaparral, coastal sage scrub, and valley and foothill grasslands. This sensitive plant flowers from March to July.	No	100 - 2430	Yes	Yes	**No potential for occurrence within the BSA.** The BSA lacks coastal sage scrub, chaparral, and grassland habitat capable of supporting this species.
Crossosoma californicum	Catalina crossosoma	CRPR: 1B.2	Catalina crossosoma is a perennial deciduous shrub that grows in rocky soil substrates within chaparral and coastal scrub. This sensitive plant flowers from February to May.	No	0 - 1640	Yes	Yes	**No potential for occurrence within the BSA.** The closest modern occurrence is in the Palos Verdes Peninsula, greater than 2 miles away from the BSA. The BSA does not contain similar suitable habitat or rocky soil substrates to support this species.
Deinandra paniculata	paniculate tarplant	CRPR: 4.2	Paniculate tarplant is an annual herb that is found in coastal scrub and valley and foothill grasslands, often in clay or clay loam soils or vernally moist situations, and frequently in disturbed sites. It is usually found in vernally mesic sites. Sometimes found in vernal pools or on Mima mounds near them. Habitat is variously described as vernal pool margins, grasslands, open habitats such as roadsides and disturbed areas and inland from the coast within its range on mesas and dry foothills. This sensitive plant flowers from April to November.	Yes	80 - 3085	Yes	Yes	**Low potential for occurrence within the BSA.** The closest modern occurrences lie farther than 2 miles from the BSA, in the vicinity of the foothills of the Santa Monica mountains. Colonization by this species would largely be limited to disturbed, open areas such as the fringes of Wylie Sump that contain upland vegetation species. However, recruitment is limited by lack of existing habitat corridors and largely developed areas surrounding the BSA.
Dichondra occidentalis	western dichondra	CRPR: 4.2	Western dichondra is a perennial herb that can be found growing in coastal scrub, chaparral, cismontane woodlands, and valley and foothill grasslands. It is primarily found in southern and central California, in addition to the Channel Islands.	No	165 - 1640	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain suitable coastal scrub, chaparral, woodland, or grassland habitat to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Dudleya virens ssp. insularis	island green dudleya	CRPR: 1B.2	Island green dudleya is a perennial herb that grows in rocky soil substrates, within coastal bluff scrub and coastal scrub. This moderately threatened plant flowers from April to June.	No	15 - 985	Yes	No	**No potential for occurrence within the BSA.** The BSA does not contain suitable coastal bluff, coastal scrub, or specific rocky growing substrates to support this species. Additionally, this species on the mainland is only known to occur within one population located on the Palos Verdes Peninsula.
Erysimum suffrutescens	suffrutescent wallflower	CRPR: 4.2	Suffrutescent wallflower is a perennial herb that can be found growing in coastal scrub, bluff scrub, dunes, and maritime chaparral. This threatened plant blooms from January to July.	No	0 - 490	Yes	Yes	**No potential for occurrence within the BSA.** While recent modern occurrences occur within 2 miles of the BSA, these are limited to areas with dedicated sand dune and coastal bluff habitat. The BSA does not contain suitable habitat capable of sustaining this species.
Hordeum intercedens	vernal barley	CRPR: 3.2	Vernal barley is an annual herb that is associated with coastal dunes, vernal pools and saline flats and depressions in valley and foothill grasslands. In Riverside County, vernal barley is associated with alkali flats and floodplains within the alkali vernal plains community. Within this community vernal barley is primarily associated with alkali annual grasslands and vernal pools and to a lesser extent alkali scrub and alkali playa. This sensitive plant flowers from March to June.	No	15 - 3280	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain suitable coastal dune, vernal pool, or grassland habitat to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Horkelia cuneata var. puberula	mesa horkelia	CRPR: 1B.1	Mesa horkelia is a perennial herb that is found in sandy or gravelly sites of maritime chaparral, coastal scrub, and cismontane woodlands. This sensitive plant flowers from February to September.	No	230 - 2660	No	Yes	**No potential for occurrence within the BSA.** The BSA does not contain suitable maritime chaparral, coastal scrub, woodland habitat or gravelly growing substrates to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Isocoma menziesii var. decumbens	decumbent goldenbush	CRPR: 1B.2	Decumbent goldenbush is a perennial shrub that is often found in sandy flats and slopes and disturbed areas within chaparral and coastal scrub. This sensitive plant	No	35 - 820	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain suitable chaparral and coastal

Scientific Name	Common Name (=Synonym)	Status	Habitat Requirements	BSA Contains Potential Suitable Habitats	Plant Elevation Range (feet amsl)	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
						Elevation Range	General Distribution	
			flowers from April to November.					scrub habitat or sandy growing substrates to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Juglans californica	Southern California black walnut	CRPR: 4.2	Southern California black walnut is a perennial deciduous tree that utilizes a variety of habitats in Southern California. Sometimes it is present within coastal scrub and rarely occurs in chaparral. Also found in cismontane woodlands. Found on slopes, canyons and alluvial habitats. This sensitive plant flowers from March to August.	No	165 - 2955	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain ideal coastal scrub, woodlands, or sloped alluvial wash habitat. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Juncus acutus ssp. leopoldii	southwestern spiny rush	CRPR: 4.2	Southwestern spiny rush is a perennial rhizomatous herb that usually occurs in wetlands (alkaline seeps, swamps, and salt marshes) but occasionally found in non-wetlands (meadows and coastal dunes). It prefers moist, saline places throughout southern California. This sensitive plant flowers from March to June.	No	10 - 2955	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain meadow, coastal dune, or brackish wetland or saline habitat to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	CRPR: 1B.1	Coulter's goldfields is an annual herb that is associated with low-lying alkali habitats along the coast and in inland valleys. The majority of the populations are associated with coastal salt marshes and swamps. Coulter's goldfields occurs primarily in the alkali vernal plains community. These are floodplains dominated by alkali scrub, alkali playas, vernal pools, and alkali grasslands. These habitats form mosaics that are largely dependent on salinity and micro-elevational differences. This sensitive plant flowers from February to June.	No	5 - 4005	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain coastal salt marsh, coastal swamp, alkali scrub, or vernal pool habitat to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Lycium brevipes var. hassei	Santa Catalina Island desert-thorn	CRPR: 3.1	Santa Catalina Island desert-thorn is a perennial shrub that grows within coastal scrub and coastal bluff scrub habitat. This threatened plant flowers from June to August.	No	215 - 985	No	Yes	**No potential for occurrence within the BSA.** The BSA does not contain coastal scrub or coastal bluff scrub habitat to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Lycium californicum	California box-thorn	CRPR: 4.2	California box-thorn is a perennial shrub that grows in coastal bluff scrub and coastal scrub habitat. This threatened plant flowers from March to August.	No	15 - 490	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain coastal scrub or coastal bluff scrub habitat to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Mucronea californica	California spineflower	CRPR: 4.2	California spineflower is an annual herb that is associated with very sandy soils in coastal dunes, coastal scrub, chaparral, cismontane woodlands, and valley and foothill grasslands. This sensitive plant flowers from March to August.	No	0 - 4595	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not coastal scrub, dune, chaparral, woodland, grassland habitat, or adequate sandy soil growing substrates to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Nama stenocarpa	mud nama	CRPR: 2B.2	Mud nama is an annual/perennial herb that is found along marshes, swamps, lake shores, riverbanks, stream banks and intermittently wet areas. This sensitive plant flowers from January to July.	No	15 - 1640	Yes	No	**No potential for occurrence within the BSA.** The BSA does not contain suitable habitat to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA. Recent modern occurrences are situated within Orange County.
Navarretia prostrata	prostrate vernal pool navarretia	CRPR: 1B.1	Prostrate vernal pool navarretia is an annual herb that is found in coastal scrub, valley and foothill grasslands (alkaline washes), meadows and seeps, and vernal pools. This sensitive plant flowers from April to July.	No	10 - 3970	Yes	Yes	**No potential for occurrence within the BSA.** Occurrence records of the species within 2 miles of the BSA are dated (>40 years). There are no modern records (<20 years) of this species within 2 miles of the BSA. While it is possible that this species has not yet extirpated from the area, the BSA itself does not contain suitable coastal scrub,

Scientific Name	Common Name (=Synonym)	Status	Habitat Requirements	BSA Contains Potential Suitable Habitats	Plant Elevation Range (feet amsl)	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
						Elevation Range	General Distribution	
								valley, or foothill grassland habitat capable of supporting this species.
Nemacaulis denudata var. denudata	coast woolly-heads	CRPR: 1B.2	Coast woolly-heads is an annual herb that grows in sandy Coastal dune habitat. This threatened plant flowers from April to September.	No	0 - 330	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain suitable habitat to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Phacelia ramosissima var. austrolitoralis	south coast branching phacelia	CRPR: 3.2	South coast branching phacelia is a perennial herb that grows in sandy soils and sometimes rocky substrates. It is found within chaparral, coastal dunes, coastal scrub, and coastal salt marshes and swamps. This sensitive plant flowers from March to August.	No	15 - 985	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain suitable chaparral, coastal dune, salt marsh habitat or sandy soil growing substrates to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Phacelia stellaris	Brand's star phacelia	CRPR: 1B.1	Brand's star phacelia is an annual herb that is found on open areas in coastal dunes and coastal scrub. This species typically occurs in sandy openings, sandy benches, dunes, sandy washes, or floodplains of rivers. This listed plant flowers from March to June.	No	5 - 1310	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain suitable coastal dune and coastal scrub habitat or sandy soil growing substrates to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Potentilla multijuga	Ballona cinquefoil	CRPR: 1A	Ballona cinquefoil is a perennial herb that is found in brackish meadows and seeps. This sensitive plant flowers from June to August.	No	0 - 5	No	Yes	**No potential for occurrence within the BSA.** The BSA does not contain suitable habitat for this species, in addition to being above this species' elevation range.
Sidalcea neomexicana	salt spring checkerbloom	CRPR: 2B.2	Salt spring checkerbloom is a perennial herb that is found in alkaline, mesic sites in chaparral, coastal scrub, lower montane coniferous forests, Mojavean desert scrub, alkali playas, and brackish marshes. This sensitive plant flowers from March to June.	No	50 - 5020	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain suitable chaparral, coastal scrub, coniferous forest, playa, or brackish marsh habitat to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Suaeda esteroa	estuary seablite	CRPR: 1B.2	Estuary seablite is a perennial fleshy herb that is found in coastal salt marshes and swamps often growing with *Salicornia subterminalis*. Soils at such locales are usually mapped as tidal flats. Oftentimes, only a narrow band of terrain on the very periphery of the salt marsh is utilized by this plant. This sensitive plant flowers from May to January.	No	0 - 15	No	Yes	**No potential for occurrence within the BSA.** The BSA does not contain coastal salt marsh or tidal flat habitat to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Suaeda taxifolia	woolly seablite	CRPR: 4.2	Woolly seablite is a perennial evergreen shrub, that grows within the coastal margins of marshes and swamps, coastal dunes, and coastal bluff scrub. This threatened plant blooms all year, January to December.	No	0 - 165	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain coastal dune, coastal bluff scrub, or coastal marsh habitat to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.
Symphyotrichum defoliatum	San Bernardino aster	CRPR: 1B.2	San Bernardino aster is a perennial rhizomatous herb that is found in cismontane woodlands, coastal scrub, lower montane coniferous forests, meadows and seeps, marshes and swamps, and vernally mesic valley and foothill grasslands. While this species usually occurs in meadows, springs and streams, it also occurs in upland habitats. It can be found near ditches, streams, springs or disturbed areas. Grows in seasonally moist fine alluvial soils. This sensitive plant flowers from July to November.	No	5 - 6695	Yes	Yes	**No potential for occurrence within the BSA.** The BSA does not contain woodland, coastal scrub, meadow, or grassland habitat to support this species. Additionally, there are no modern occurrences (<20 years) within 2 miles of the BSA.

Legend and Notes

Notes:

- The BSA contains approximate elevations of 140 to 185 ft above mean sea level (amsl).
- The BSA encompasses disturbed habitat and development, including Mira Costa High School, neighborhoods, and a park which contain ornamental plants, disturbed lots, and a maintained field.
- **Yes** = the BSA is located within the plant species' known distribution, elevation range, and/or the BSA contains suitable habitats and/or soils to support the plant species. The plant species has a potential to occur within the BSA. Further evaluation is needed.

Legend and Notes

- **No** = the BSA is located outside the plant species' known distribution, elevation range, and/or the BSA lacks suitable habitats and/or soils to support the plant species. It is highly unlikely for the plant species to have a potential to occur within the BSA. No further evaluation is needed.
- A CNPS elevation range is provided for each taxon in feet. The stated range is for the California portion of a plant's range only (if the taxon also occurs outside the state). These CNPS elevation range data are accumulated from literature, herbarium specimens, and field survey information.

Federal Endangered Species Act (ESA) Listing Codes: the ESA is administered by the USFWS and NMFS. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish such as salmon. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments. The official federal listing of Endangered and Threatened plants is published in 50 CFR § 17.12.

- **FE = federally listed as endangered:** any species of plant or animal that is in danger of extinction throughout all or a significant portion of their range.
- **FT = federally listed as threatened:** any species of plant or animal that is considered likely to become endangered throughout all or a significant portion of its range within the foreseeable future.
- **FPE = federally proposed for listing as endangered:** a candidate species that has been proposed by USFWS for listing as endangered and the proposed rule, but not a final rule, to list has been published in the Federal Register.
- **FPT = federally proposed for listing as threatened:** a candidate species that has been proposed by USFWS for listing as threatened and the proposed rule, but not a final rule, to list has been published in the Federal Register.
- **FPD = federally proposed for delisting:** a species that has been proposed by USFWS for delisting (or down listing from endangered to threatened) and the proposed rule to delist has been published in the Federal Register.

California Endangered Species Act (CESA) and California Native Plant Protection Act (NPPA) Listing Codes: the CESA and NPPA are administered by CDFW. The official listing of *Plants of California Declared to Be Endangered, Threatened or Rare* is contained in the California Code of Regulations, Title 14, § 670.2. Species, subspecies and varieties of California native plants are declared to be endangered, threatened as defined by § 2062 and § 2067 of the Fish and Game Code or rare as defined by § 1901 of the Fish and Game Code.

- **SE = state-listed as endangered:** "endangered species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish and Game Code § 2062).
- **ST = state-listed as threatened:** "threatened species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts (Fish and Game Code § 2067).
- **SCE = state candidate for listing as endangered:** a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for addition to the list of endangered species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).
- **SCT = state candidate for listing as threatened:** a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for addition to the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).
- **SCD = state candidate for delisting:** a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for removal from either the list of endangered species or the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to remove the species from either list.
- **SR = state rare:** A species, subspecies, or variety of native plant is rare when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens (Fish and Game Code § 1901).

Other:

- **Annual**: grows from seed and reproduce within a single year.
- **Perennial**: lives more than one year.
- **Deciduous**: plants shed their leaves for part of the year.
- **Evergreen:** plants retain their leaves for an entire year.
- **Mesic habitat:** a habitat with a moderate or well-balanced supply of moisture.
- **Hemiparasitic:** plants that are connected to host plants and derive energy, water, and minerals from them, but also maintain their own functional root systems or photosynthetic surfaces.
- **Parasitic:** plants that are connected to host plants and rely solely on them for energy, water, and nutritional requirements.
- **Carnivorous:** plants that trap insects and other small animals and derive nourishment from them.
- **Herbs**: plants that are herbaceous and lack above-ground woody tissue. .
- **Shrubs:** smaller woody perennials that retain most of their above-ground woody tissue and are typically many-stemmed.
- **Trees:** larger woody perennials that retain all of their above-ground wood tissue and are typically single-stemmed.
- **Vines:** twining woody perennials requiring external support for growth.
- **Mosses:** small green plants (one of three groups of bryophytes) with structures that resemble miniature leaves and stems. The leaves generally have a midrib called a costa. The sporophyte (the spore-bearing structure) is persistent for weeks.
- **Liverworts:** small green plants (one of three groups of bryophytes). There are both leafy and thalloid types - leafy liverworts lack a midrib on the leaves, while thalloid liverworts have no leaves. The sporophyte is short-lived.

CNPS California Rare Plant Ranks: the CNPS is a statewide, nonprofit organization that maintains, with CDFW, an Inventory of Rare and Endangered Plants of California. In the spring of 2011, CNPS and CDFW officially changed the name "CNPS List" or "CNPS Ranks" to "California Rare Plant Rank" (or CRPR). This was done to reduce confusion over the fact that CNPS and CDFW jointly manage the Rare Plant Status Review Groups and the rank assignments are the product of a collaborative effort and not solely a CNPS assignment.

- **CRPR: 1A = California Rare Plant Rank 1A - plants presumed extirpated in California and either rare or extinct elsewhere:** the plants with a CRPR of 1A are presumed extirpated because they have not been seen or collected in the wild in California for many years. This rank includes plants that are both presumed extinct as well as those plants which are presumed extirpated in California. All of the plants constituting CRPR 1A meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. Should these taxa be rediscovered, it is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

Legend and Notes

- **CRPR 1B = California Rare Plant Rank 1B - plants rare, threatened, or endangered in California and elsewhere:** plants with a CRPR of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. All of the plants constituting CRPR 1B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.
- **CRPR 2A = California Rare Plant Rank 2A - plants presumed extirpated in California, but more common elsewhere:** the plant taxa of CRPR 2A are presumed extirpated because they have not been observed or documented in California for many years. This list includes only those plant taxa that are presumed extirpated in California, but more common elsewhere in their range. All of the plants on List 2A meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code and are eligible for state listing. Should these taxa be rediscovered, it is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.
- **CRPR 2B = California Rare Plant Rank 2B - plants rare, threatened, or endangered in California, but more common elsewhere:** except for being common beyond the boundaries of California, plants with a CRPR of 2B would have been ranked 1B. From the federal perspective, plants common in other states or countries are not eligible for consideration under the provisions of the ESA. All of the plants constituting CRPR 2B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.
- **CRPR 3 = California Rare Plant Rank 3 - plants about which more information is needed - a review list:** the plants that comprise CRPR 3 are united by one common theme – CNPS and CDFW lack the necessary information to assign them to one of the other ranks or to reject them. Nearly all of the plants constituting CRPR 3 are taxonomically problematic. Some of the plants constituting CRPR 3 meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code and are eligible for state listing. CNPS strongly recommends that CRPR 3 plants be evaluated for consideration during preparation of environmental documents relating to CEQA.
- **CRPR 4 = California Rare Plant Rank 4 - plants of limited distribution - a watch list**: the plants in this category are of limited distribution or infrequent throughout a broader area in California. While CNPS and CDFW cannot call these plants "rare" from a statewide perspective, they are uncommon enough that their status should be monitored regularly. Should the degree of endangerment or rarity of a CRPR 4 plant change, CNPS and CDFW will transfer it to a more appropriate rank. Some of the plants constituting CRPR 4 meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and few, if any, are eligible for state listing. Nevertheless, many of them are significant locally, and CNPS strongly recommends that CRPR 4 plants be evaluated for consideration during preparation of environmental documents relating to CEQA.

CNPS California Rare Plant Ranks Threat Ranks: The CNPS Threat Rank is an extension added onto the California Rare Plant Rank (CRPR) (as a decimal code) and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. A Threat Rank is present for all CRPR 1B's, 2B's, 4's, and the majority of CRPR 3's. CRPR 4 plants are seldom assigned a Threat Rank of .1, as they generally have large enough populations to not have significant threats to their continued existence in California; however, certain conditions exist to make the plant a species of concern and hence be assigned a CRPR. In addition, all CRPR 1A and 2A (presumed extirpated in California), and some CRPR 3 (need more information) plants, which lack threat information, do not have a Threat Rank extension.

- **.1** = seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat).
- **.2** = moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat) .
- **.3** = not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

4.2.3.2. Wildlife

Table 5. Special-Status Wildlife Species

Scientific Name (=Synonym)	Common Name (=Synonym)	Status	General Habitat Descriptions in California	The BSA: Located Within Species' Distribution and/or Elevation Range (if known)	The BSA: Contains Suitable Foraging, Roosting, and/or Breeding Habitats	Potential For Occurrence in the BSA
Listed Endangered, Threatened, and Candidate Wildlife: **Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.**						
Listed Amphibians						
Spea hammondii	Western spadefoot	FPT, CDFW: SSC, BLM: S	The western spadefoot inhabits a range of environments including coastal sage scrub, open chaparral, pine-oak woodlands, and grasslands, but is most commonly found in grasslands with vernal pools or mixed grassland and coastal sage scrub areas. Successful reproduction depends on the presence of rain-fed vernal pools or slow-moving streams that retain standing water for at least three weeks, allowing larvae to metamorphose. Western spadefoots estivate in burrows about one meter deep within sandy or gravelly soils in upland habitats adjacent to breeding sites. Their range extends from near Redding south through the Great Valley and foothills, the South Coast Ranges, coastal southern California, and into northwest Baja California.	Yes	No	**No potential for occurrence in the BSA.** The BSA lacks the habitat requirements to support this species.
Listed Invertebrates						
Bombu crotchii	Crotch's bumble bee	SCE	Crotch's bumblebee inhabits open grassland and scrub habitats across California. Most observations occur in southern California, particularly in coastal areas. Although its historic range has declined by nearly 98%, the species still persists in parts of the Western Desert, Pacific Coast, and Mediterranean regions of the state. Crotch's bumblebee nests underground, often in abandoned rodent burrows. While its overwintering habitat remains unknown, it is presumed to follow patterns similar to other bumblebee species, overwintering beneath leaf litter or in soft soil. The species forages on a range of native flowering plants, including snapdragons (*Antirrhinum* spp.), heliotropes (*Phacelia* spp.), Clarkia (*Clarkia* spp.), bush poppies (*Dendromecon* spp.), poppies (*Eschscholzia* spp.), and buckwheat (*Eriogonum* spp.).	Yes	Yes	**Low potential for occurrence.** While there are modern occurrences documented within 2 miles of the BSA, the BSA itself lacks open grassland, scrub habitat, and preferred flowering vegetation species within the BSA. It is likely that any encounters with this species within the BSA would be transient in nature rather than indicative of active occupation within project bounds or nearby nesting.
Danaus plexippus	Monarch butterfly	FPT, USFS: S	Monarch Butterflies are found in meadows, gardens, and open fields across North America. Breeds in summer and migrates to central Mexico for winter. Their diet consists primarily of milkweed (*Asclepias* spp.) during the larval stage, while adults feed on nectar from a variety of flowering plants, including goldenrod (*Solidago* spp.) and asters (*Aster* spp.).	Yes	Yes	**Moderate potential for occurrence in the BSA.** The BSA contains one *Eucalyptus* spp. stand within the BSA that could potentially serve as overwintering habitat, due to its location within the BSA and extensive canopy. The BSA lacks milkweed, a plant necessary as an egg-laying site and food source for larvae but adults will utilize a wide variety of flowering plants as a nectar source during migration, and this species is commonly seen nearby. However, a lack of certain features such as a consistent source of a "puddled" water that could safely support this species limits overwintering site potential.
Glaucopsyche lygdamus palosverdesensis	Palos Verdes blue butterfly	FE	The Palos Verdes blue butterfly is endemic to the Palos Verdes Peninsula in Los Angeles County, California. It is a subspecies of the widespread silvery blue butterfly found throughout western North America. This butterfly inhabits coastal sage scrub in cool, often foggy canyons and terraces on the peninsula and depends on Southern California locoweed (*Astragalus trichopodus* var. *lonchus*) as its host plant. The locoweed grows on well-drained clay and gravel soils, typically on rocky coastal slopes.	No	No	**No potential for occurrence in the BSA.** The BSA does not contain adequate sand dune, coastal bluff habitat, or host plants to sustain this species.
Listed Mammals						

Scientific Name (=Synonym)	Common Name (=Synonym)	Status	General Habitat Descriptions in California	The BSA: Located Within Species' Distribution and/or Elevation Range (if known)	The BSA: Contains Suitable Foraging, Roosting, and/or Breeding Habitats	Potential For Occurrence in the BSA
Perognathus longimembris pacificus	Pacific pocket mouse	FE, CDFW: SSC	The Pacific pocket mouse is one of 16 currently recognized subspecies of the little pocket mouse (*Perognathus longimembris*), which is widely distributed throughout arid regions of the western United States, extending into northern Baja California and west-central Sonora, Mexico. Historically, the Pacific pocket mouse was found within 2.5 miles of the Pacific Ocean, ranging from Los Angeles County south to near the Mexican border in San Diego County, California. It is primarily associated with sandy soils in a variety of habitats with open vegetation structure in coastal southern California, including dunes, strands, mesas, and drainages with mixed coastal scrub, grasses, and forbs. It is believed that the Pacific pocket mouse is adapted to several similar coastal habitats with open, shrubby vegetation, including coastal strands, coastal dunes, weedy vegetation on river alluvium, and open coastal sage scrub. For burrowing, it requires areas with fine-grained, sandy soils and alluvial sands near the ocean. The Pacific pocket mouse is a nocturnal, burrowing rodent equipped with external fur-lined cheek pouches for carrying food.	Yes	No	**No potential for occurrence in the BSA.** The BSA lacks suitable fine-grained, sandy soils in addition to dune and scrub habitat that would provide the specific shelter and foraging opportunities necessary to sustain this species.
Sensitive Wildlife: **These animals have no official status under the ESA and/or the CESA; however, they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations.**						
Sensitive Birds						
Coturnicops noveboracensis	yellow rail	CDFW: SSC, USFWS: S, USFWS: BCC	The yellow rail is a small, chicken-like marsh bird with relatively long legs that breeds in grassy marshes and meadows, favoring large wet meadows or shallow marshes dominated by sedges and grasses in summer. It typically nests in shallow freshwater sedge marshes where water is no more than a foot deep. Nests are shallow cups made of sedges and grasses, usually located on damp soil or over water less than six inches deep, with a concealing canopy of dead plants above. The presence of senescent vegetation is important for nest concealment. During winter, it inhabits coastal salt marshes, especially drier areas with dense stands of spartina, as well as rice fields and damp meadows near the coast. These habitats are seasonally flooded with water depths ranging from 2 to 30 cm, have saturated and poorly drained soils, and are often bordered by coniferous forests. The species breeds across much of Canada, including Alberta, Saskatchewan, Manitoba, Ontario, and parts of Quebec, Northwest Territories, and Nunavut, as well as the northern U.S. states of North Dakota, Minnesota, Wisconsin, and Michigan. A disjunct breeding population occurs in south-central Oregon's Klamath Basin, which likely migrates to the central California coast during winter.	No	No	**No potential for occurrence in the BSA.** There is freshwater wetland habitat of limited quality present in the form of Wylie Sump. However, this species' typical distribution range within California is limited to the central coast. There are no modern occurrences (<20 years) within 2 miles of the BSA. Modern occurrences within the BSA and the surrounding region would be limited to vagrant individuals.
Sensitive Invertebrates						
Bombus pensylvanicus	American bumble bee	IUCN: VU	Once one of the most widespread bumblebees in North America, the American bumblebee can now be found within the eastern U.S. and Great Plains regions, the central U.S., Southern California, and the southernmost regions of Canada. The American bumble bee is a foraging generalist and visits a variety of habitats, often inhabiting open fields and farmlands where it builds nests within tall grass or underground in abandoned rodent burrows. Common floral resource include milk-vetches (*Astragalus* spp.), thistles (*Cirsium* spp.), dogwoods (*Cornus* spp.), prairie-clovers (*Dalea* spp.), and sunflowers *(Helianthus* spp.).	Yes	Yes	**Moderate potential for occurrence in the BSA.** The BSA contains a variety of flowering species that may support general foraging activities by this species. There are multiple modern occurrences (<20 years) documented within 2 miles of the BSA. The absence of ideal grassland habitat or observed burrowing mammal species limits potential nesting within the BSA.
Brennania belkini	Belkin's dune tabanid fly	IUCN: VU	This rare species is native to Los Angeles County, Ventura County, and Northern Baja California. The Belkin's dune tabanid fly is a species within the horse-fly family, Tabanidae. The Belkin's dune tabanid fly inhabits coastal sand dune habitat, which is mandatory for breeding. The first known breeding colony documented at Ballona Creek in Los Angeles County.	Yes	No	**No potential for occurrence in the BSA.** While this species has a modern occurrence located within 2 miles of the BSA, it is limited to the sand dunes and scrub habitat associated with the nearby El Segundo Blue Butterfly Preserve. The BSA lacks suitable sand dune habitat that would be capable of supporting all foraging or

Scientific Name (=Synonym)	Common Name (=Synonym)	Status	General Habitat Descriptions in California	The BSA: Located Within Species' Distribution and/or Elevation Range (if known)	The BSA: Contains Suitable Foraging, Roosting, and/or Breeding Habitats	Potential For Occurrence in the BSA
						breeding activities of this species.
Sensitive Reptiles						
Anniella stebbinsi	Southern California legless lizard	CDFW: SSC, USFS: S	The Southern California legless lizard, also known as the San Diegan legless lizard, is a small, slender lizard with no legs, eyelids, a shovel-shaped snout, smooth shiny scales, and a blunt tail. It inhabits a wide range of habitats including broadleaved upland forests, chaparral, coastal dunes, coastal scrub, sandy washes, and alluvial fans, generally preferring moist, loose soils with sparse vegetation. It is often found under rocks, logs, and leaf litter in sunny areas, and can sometimes be found even in suburban gardens. This species is more widely distributed and locally abundant compared to others in its genus, with populations ranging throughout southern California south of the Transverse Ranges into northern Baja California, Mexico. Some populations occur in disjunct mountain areas in Kern County, separated from the main range by southern populations of a closely related species. Coastal development has destroyed much dune habitat, but protected populations persist, such as in the El Segundo Dunes near Los Angeles.	Yes	Yes	**Low potential for occurrence in the BSA.** While this species can inhabit a variety of habitats, the BSA contains limited habitat that could be used by this species due to existing development. Modern occurrences appear to be associated with the coastal bluff and dedicated parkway located within 2 miles of the BSA. Given the lack of habitat connectivity with the BSA, this species is unlikely to be encountered within the project footprint.
Phrynosoma blainvillii	coast horned lizard	CDFW: SSC, BLM: S	The coast horned lizard, also known as Blainville's horned lizard, is a flat-bodied lizard with a wide, oval-shaped body, scattered enlarged pointed scales on the upper body and tail, and a prominent crown of horns or spines on the head. It is diurnal, active during warm weather, and retreats underground during periods of cold or extreme heat. It is found in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak (*Quercus* spp.) woodland, riparian woodland, and coniferous forest. In inland areas, it is restricted to pockets of open microhabitat created by disturbance such as floods, fire, roads, grazed areas, or fire breaks. Key habitat elements include loose, fine soils with a high sand content, abundant native ants or other insects for food, open areas with limited overstory for basking, and low but dense shrubs for refuge. It is often observed in valleys, foothills, and semiarid mountains, commonly along sandy washes, dirt roads, and near ant hills. Historically found from the Baja California border north along the Pacific coast to the Bay Area and as far inland as Shasta Reservoir, including the Kern Plateau east of the Sierra Nevada crest, its range has been severely fragmented due to land alteration. It also occurs in northwestern Baja California.	Yes	No	**No Potential for Occurrence in the BSA.** The BSA lacks the lacks the sandy to fine soils for which this species requires.

Legend and Notes

Notes

- **Yes** = the BSA is located within the wildlife species' known distribution, elevation range, and/or the BSA contains suitable habitats or conditions to support the species. The wildlife species has the potential to occur within the BSA. Further evaluation is needed.
- **No** = the BSA is located outside the wildlife species' known distribution, elevation range, and/or the BSA lacks suitable habitats or conditions to support the species. It is highly unlikely for the wildlife species to have a potential to occur within the BSA. No further evaluation is needed.
- **DPS = distinct population segment:** A DPS, or a distinct population segment, is a vertebrate population or group of populations that is discrete from other populations of the species and significant in relation to the entire species. The ESA provides for listing species, subspecies, or distinct population segments of vertebrate species.
- **ESU = evolutionarily significant unit:** a Pacific salmon population or group of populations that is substantially reproductively isolated from other conspecific populations and that represents an important component of the evolutionary legacy of the species.

Federal Endangered Species Act (ESA) Listing Codes: the ESA is administered by the USFWS and NMFS. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish such as salmon. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments. The official federal listing of Endangered and Threatened animals is published in 50 CFR § 17.11.

- **FE = federally listed as endangered:** any species of plant or animal that is in danger of extinction throughout all or a significant portion of their range.
- **FT = federally listed as threatened:** any species of plant or animal that is considered likely to become endangered throughout all or a significant portion of its range within the foreseeable future.
- **FC = federal candidate for listing:** candidate species are plants and animals for which the USFWS has sufficient information on their biological status and threats to propose them for listing as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by higher priority listing actions to address species in greater need. A proposed regulation has not yet been published in the Federal Register for these species.
- **FPE = federally proposed for listing as endangered:** a candidate species that has been proposed by USFWS or NMFS for listing as endangered and the proposed rule, but not a final rule, to list has been published in the Federal Register.

Legend and Notes

- **FPT = federally proposed for listing as threatened:** a candidate species that has been proposed by USFWS or NMFS for listing as threatened and the proposed rule, but not a final rule, to list has been published in the Federal Register.
- **FPD = federally proposed for delisting:** a species that has been proposed by USFWS or NMFS for delisting (or down listing from endangered to threatened) and the proposed rule to delist has been published in the Federal Register.

California Endangered Species Act (CESA) Listing Codes: the CESA is administered by CDFW. The official listing of *Animals of California Declared To Be Endangered or Threatened* is contained in the California Code of Regulations, Title 14, § 670.5. Species and subspecies of California native animals are declared to be endangered or threatened as defined by §§ 2062 and 2067 of the Fish and Game Code.

- **SE = state-listed as endangered:** "endangered species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish and Game Code § 2062).
- **ST = state-listed as threatened:** "threatened species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts (Fish and Game Code § 2067).
- **SCE = state candidate for listing as endangered:** a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for addition to the list of endangered species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).
- **SCT = state candidate for listing as threatened:** a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed by publication in the California Regulatory Notice Register as being under review by CDFW for addition to the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).
- **SCD = state candidate for delisting:** a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for removal from either the list of endangered species or the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to remove the species to either list.

California Department of Fish and Wildlife (CDFW) Designations:

For some wildlife species, the CNDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nesting colonies. For many species of birds, the primary emphasis is on the breeding population in California. For some species which do not breed in California but winter here, emphasis is on wintering range. The SSC designation thus may include a comment regarding the specific protection provided such as nesting or wintering

- **SSC = species of special concern:** a species of special concern is a species, subspecies, or distinct population of an animal (fish, amphibian, reptile, bird and mammal) native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria: is extirpated from the state or, in the case of birds, in its primary seasonal or breeding role; is listed as federally-, but not state-, threatened or endangered; meets the state definition of threatened or endangered, but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status; has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for state threatened or endangered status.
- **Fully protected:** fully protected animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Lists were created for fish (Fish and Game Code § 5515), amphibians and reptiles (Fish and Game Code § 5050), birds (Fish and Game Code § 3511) and mammals (Fish and Game Code § 4700).
- **WL = watch list:** this list includes birds identified in the *California Bird Species of Special Concern* (Shuford and Gardali, 2008) report and are not on the current CDFW species of special concern list, but were on previous lists and they have not been state-listed under CESA; were previously state or federally listed and now are on neither list; or are on the list of fully protected species.
- **Special Animals List:** the CESA does not allow listing of insects, so despite the insect's precarious status, the insect has no protection under state legislation. CDFW includes this insect on its Special Animals List.
- **California Fish and Game Code §§ 4800 – 4810:** The mountain lion (genus *Puma*) is a specially protected mammal under the laws of California. It is unlawful to take, injure, possess, transport, import, or sell any mountain lion or any part or product thereof, except as specifically provided in California Fish and Game Code §§ 4800 - 4810.
- **California Code of Regulations [CCR], Title 14 § 460**: There is to be no take at any time for Fisher, marten, river otter, desert kit fox and red fox.

Global Ranking

The global rank (G-rank) is a reflection of the overall status of an element throughout its global range.

- GX: Presumed Extinct – Not located despite intensive searches and virtually no likelihood of rediscovery.
- GH: Possibly Extinct – Known from only historical occurrences but still some hope of rediscovery. Examples of evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species has been searched for unsuccessfully, but not thoroughly enough to presume that it is extinct throughout its range.
- G1: Critically Imperiled – At very high risk of extinction due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
- G2: Imperiled – At high risk of extinction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
- G3: Vulnerable – At moderate risk of extinction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
- G4: Apparently Secure – At fairly low risk of extinction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
- G5: Secure – At very low risk of extinction due to a very extensive range, abundant populations, or occurrences, and little to no concern from declines or threats.
- GNR: Unranked – Global rank not yet assessed.

State Ranking:

The state rank (S-rank) is assigned in much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries.

- SX: Presumed Extirpated – Species is believed to be extirpated from the state not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered
- SH: Possibly Extirpated – Known from only historical records but still some hope of rediscovery. There is evidence that the species may no longer be present in the state, but not enough to state this with certainty. Examples of such evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.
- S1: Critically Imperiled – At very high risk of extirpation in the state due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
- S2: Imperiled – At high risk of extirpation in the state due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

Legend and Notes
• S3: Vulnerable – At moderate risk of extirpation in the state due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors. • S4: Apparently Secure – At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of recent declines, threats, or other factors. • S5: Secure – At very low or no risk of extirpation in the state due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats. • SNR: Unranked – State rank not yet assessed. ***United States Fish and Wildlife Service (USFWS) Designations:*** • **FSC = federal species of concern:** federal species of concern is an informal term. It is not defined in the ESA. The term commonly refers to species that are declining or appear to be in need of conservation. • **BCC = bird of conservation concern:** a bird of conservation concern is listed in the USFWS' 2008 *Birds of Conservation Concern* report. The report identifies species, subspecies, and populations of all migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that, without additional conservation actions, are likely to become candidates for listing under the ESA. While all of the bird species included in the report are priorities for conservation action, the list makes no finding with regard to whether they warrant consideration for ESA listing.

4.3. BIOLOGICAL RECONNAISSANCE SURVEY

4.3.1. Vegetation

4.3.1.1. Vegetation Communities Descriptions

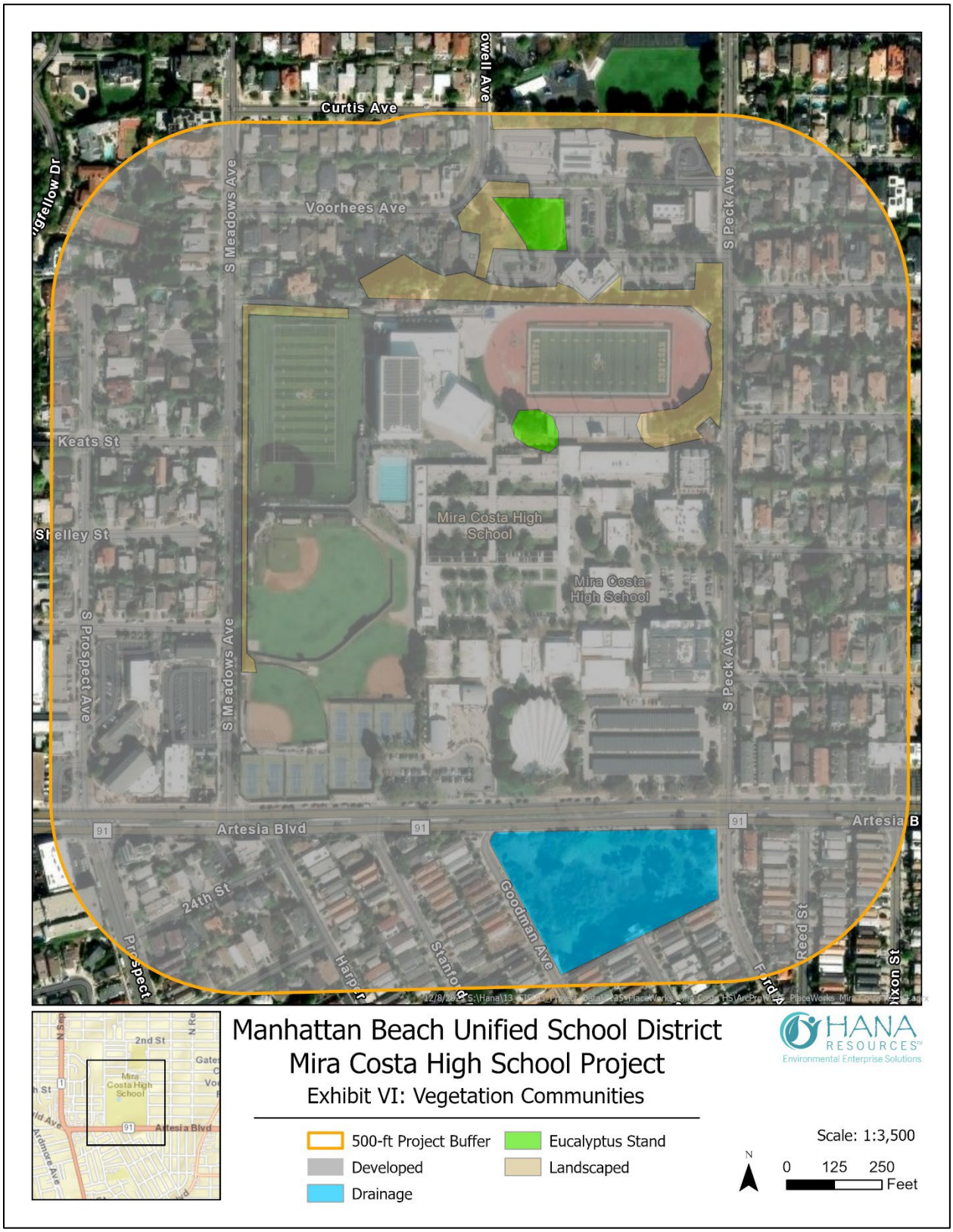
Determining vegetation communities is critical for understanding the natural processes of the area and informs potentials for wildlife and plant species to occur. Three vegetation communities were determined within the site. Descriptions of these communities found within the BSA are discussed below. A map that illustrates all onsite plant communities is included in **Exhibit VI,** *Vegetation Communities.*

Developed
Developed areas are those that primarily consist of structures, pavement, and roads. The majority of the Mira Costa High School campus falls into this community; there are various ornamental trees dispersed across campus, but limited areas where wildlife can disperse in a continuous manner. Species present include Chinese elm (*Ulmus parvifolia*), olive (*Olea europea*), western sycamore (*Platanus racemosa*), pampass grass (*Cortaderia selloana*), bermuda grass (*Cynodon dactylon*), and annual blue grass (*Poa annua*).

Landscape
This area refers to landscaped lawns characterized by low grasses or patches of areas that are maintained but likely host small numbers of invasive or ruderal species and ornamental trees. There are several areas along the edges of the project site and neighboring properties throughout the BSA that include this community. Common species in this community include Chinese banyan (*Ficus microcarpa*), bird of paradise (*Strelitzia reginae*), coastal rosemary (*Westringia fruticosa*), common ice plant (*Mesembryanthemum crystallinum*), western australian peppermint (*Agonis flexuosa*), canary island pine (*Pinus canariensis*), Outeniqua yellowwood (*Afrocarpus falcatus*), society garlic (*Tulbaghia violacea*), and Chinese flame tree (*Koelreuteria bipinnata*).

Drainage
The drainage basin located south of Mira Costa High School is primarily characterized by non-native species across all plant layer strata. Species that are normally cultivated for landscaping purposes appear to have spread species in this community include common ice plant (*Mesembryanthemum crystallinum*), beautiful bougainvillea(*Bougainvillea spectabilis*), western coastal wattle (*Acacia cyclops*), Mexican fan palm (*Washingtonia robusta*), Brazilian peppertree (*Schinus terebinthifolia*), common sow thistle (*Sonchus oleraceus*), and Chinese elm.

Exhibit VI: Vegetation Communities



4.3.1.2. Sensitive Natural Communities

Sensitive natural communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable. These communities may or may not contain special-status plants or their habitat. The literature review and survey found no sensitive vegetation communities within the BSA.

4.3.2. Plant Species

4.3.2.1. General

Plant species observed or detected during the site survey were characteristic of the existing site conditions. A full list of the plant species detected within the Survey Area is included in **Appendix C**, *Plant & Wildlife Species Observed/Detected Onsite*.

4.3.2.2. Special-Status Species

Of the forty-seven (47) special-status plant species found during the literature review, two (2) had low potential for occurrence and forty-five (45) had no potential for occurrence. None of these sensitive species were detected in the BSA during the field survey. These findings align with expectations based on the urbanized setting of the BSA and the lack of native habitat features necessary to support the sensitive species identified in the literature review. Focused surveys are required for any federal and/or state listed endangered species with potential to occur on site when the species is in bloom to ensure it is both evident and identifiable during the survey. No sensitive species were observed/detected onsite; therefore, no focused surveys are required.

4.3.3. Wildlife

4.3.3.1. General

Wildlife species observed or detected during the site survey were characteristic of the existing site conditions. A full list of the wildlife species detected within the Survey Area is included in **Appendix C**, *Plant & Wildlife Species Observed/Detected Onsite*.

Birds

Nineteen (19) species were observed/detected within the BSA during the reconnaissance field survey.

- American pipit (*Anthus rubescens*)
- Cedar waxwing (*Bombycilla cedrorum*)
- Red-shouldered hawk (*Buteo lineatus*)
- Anna's hummingbird (*Calypte anna*)
- Common raven (*Corvus corax*)
- American crow (*Corvus brachyrhynchos*)
- House finch (*Haemorhous mexicanus*)
- Dark-eyed junco (*Junco hyemalis*)
- Western gull (*Larus occidentalis*)
- Song sparrow (*Melospiza medlodia*)
- House sparrow (*Passer domesticus*)
- Mitred parakeet (*Psittacara mitrata)*
- Say's phoebe (*Sayornis saya*)
- Black phoebe (*Sayornis nigricans*)
- Allen's hummingbird (*Selasphorus sasin*)
- Yellow-rumped warbler (*Setophaga coronata*)
- Lesser goldfinch (*Spinus psaltria*)
- Mourning dove (*Zenaida macroura*)
- White-crowned sparrow (*Zonotrichia leucophrys*)

Mammals

One (1) common mammal species was detected during the field survey: the Eastern fox squirrel (*Sciurus niger*).

Reptiles/Amphibians

One (1) common reptile species was detected during the field survey: the Western fence lizard (*Sceloporus occidentalis*).

4.3.3.2. Sensitive Wildlife Species

Of the ten (10) special-status wildlife species identified in the literature review, two (2) were considered to have moderate occurrence potential in the BSA: the Monarch Butterfly (*Danaus plexippus*), and American bumble bee (*Bombus pensylvanicus*). Two (2) were considered to have low occurrence potential in the BSA: Crotch's bumble bee (*Bombu crotchii*) and Southern California legless lizard (*Anniella stebbinsi*). No sensitive species identified in the literature review were detected during the survey within the BSA.

The monarch butterfly was determined to have a moderate potential of occurrence due to the existence of a potential stand of *Eucalyptus* spp. that could serve as overwintering habitat. The canopy density of this stand could provide adequate shelter from rain, and is located at a relatively low elevation within the area that contains buildings and other features that serve as windbreaks. While the ground cover of the *Eucalyptus* spp. stand located within the school is similar in size, the canopy density is not as extensive. Additionally, the higher elevation of the stand means it is only afforded windbreak protection from the west by the nearby school gymnasium. Buildings and other BSA features of comparable height that could provide windbreak protection to this stand are located well above 500 ft away. However, certain features characteristic of ideal habitat such as nearby host plants or puddling sources of water (that are not so deep as to serve as a drowning risk for monarchs), are not present, which limit the potential of the northernmost stand to serve as overwintering habitat. This species is federally proposed for listing as threatened under the ESA, which requires a consideration of habitat present, and potential surveys for elements of a project that may impact overwintering habitat.

The American bumble bee was determined to have a moderate potential for occurrence due to this species being commonly documented within the area, with multiple occurrences within 2 miles of the BSA. While flowering species throughout the BSA can support general foraging activities, the lack of tall grassland habitat and burrowing mammal species means active site occupation in the form of nesting is limited. Occurrences are therefore likely to be limited to transient encounters. This species is not federally listed as endangered or threatened by the USFWS or CDFW.

Crotch's bumble bee was determined to have a low potential of occurrence due some suitable site features and modern documented occurrences within 2 miles of the BSA during the literature review. Modern occurrences for this species were rarer in comparison to that of the American bumble bee. Flowering species capable of supporting general foraging activities are present.

Flower types that were observed to be in bloom at the time were primarily invasive species such as cape honeysuckle, coastal rosemary, and bird of paradise. Most flowering species were in landscaping areas, facing roadways, parking lots, and along general student walkways and sidewalks. Due to the extent of developed areas, it is estimated that the total plant cover of flowering species suitable for Crotch's bumble bee is less than 5 percent of the entire BSA. This cover is intermittently dispersed throughout the project site, rather than present as an established field or continuous clearing. In addition, a lack of adequate grassland habitat and burrowing mammal species, such as small rodents, that could provide adequate

nesting opportunities means occurrences within the BSA would likely be limited to transient encounters. Crotch's bumble bee species is a state candidate for listing as endangered under CESA.

Southern California legless lizard was determined to have a low potential of occurrence due to multiple modern occurrences within 2 miles of the BSA and low quality habitat being present in the form of suburban gardens and surrounding landscaping. However, most modern occurrences that were found via the literature review highlighted that occupancy by the Southern California legless lizard is primarily within coastal bluff habitat. Lack of direct habitat connectivity within the BSA to areas with bluff or dune habitat due to development limits this species occurrence potential within the BSA. This species is a CDFW species of special concern.

SECTION 5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Wetlands

The field visit conducted on November 19, 2025, found no signs of previously unidentified wetlands that would overlap with proposed project work areas. Additionally, the project does not overlap with previously known wetlands within Wylie Sump.

Where feasible, any aquatic features, including the wetland polygons identified in the vicinity of the BSA must be avoided and minimally disturbed through best management practices to the greatest extent feasible. As part of a Stormwater Pollution Prevention Plan (SWPPP), erosion control measures and stormwater best management practices must be incorporated into construction plans, particularly along slopes that drain toward mapped aquatic features or drainages. These may include straw wattles, silt fencing, or stabilized construction entrances to prevent sediment transport.

When feasible, construction activities adjacent to potential aquatic resources shall be scheduled during the dry season (typically May through October) to reduce the risk of hydrologic disruption and erosion. If work must occur outside of the dry season (November through April), enhanced sediment and erosion controls should be utilized as necessary (e.g., two rows of silt fencing or wattles, sediment traps, etc.). Disturbed soils should be stabilized as soon as practicable following construction through native seed mixes, erosion control blankets, or equivalent methods as approved by agencies.

To ensure compliance, a qualified monitor must conduct a detailed site inspection at least once per week, or as frequently required by the project-specific SWPPP, during active construction within or adjacent to aquatic features, and within 24 hours following any rainfall event. Monitoring shall include inspection of all erosion and sediment control measures, photo documentation of work areas, and verification of adherence to avoidance and minimization measures. A weekly monitoring report summarizing site conditions, compliance status, and any corrective actions taken shall be submitted to the lead agency and maintained in the project file. The qualified monitor shall have the authority to halt work if non-compliance is observed until corrective measures are implemented.

5.2. Critical Habitat, HCPs, and NCCPs

The project area does not fall within any USFWS designated Critical Habitat, current Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP) areas. While western snowy plover critical habitat is present within 2 miles of the project area, project activities would have a less than significant effect on said Critical Habitat or western snowy plover individuals due to the inherent lack of suitable habitat (i.e. beaches, sandy nesting substrates) present within the project site or BSA. Due to existing urban development, the BSA additionally lacks movement corridors that could facilitate movement within the designated Critical Habitat, facilitate the movement to or connect one Critical Habitat parcel to another, or potentially colonize new habitat. Under consideration of these factors, it is recommended that no additional requirements need to be met or actions are imparted by the existence of any designated Critical Habitat in the vicinity of the BSA, in addition to HCPs or NCCPs.

5.3. Vegetation Communities

The parcel has long been developed, occurring within urban Los Angeles County and having been Mira

Costa High School since 1950. Landscaping typical of urban areas occurs throughout the BSA with some 90 of 99 plant species being non-native. The majority of proposed project activities are replacing or improving otherwise already established structures, such as school buildings, and therefore will have no significant impact on existing habitat located directly within the project area.

Two stands of *Eucalyptus* spp. were concluded to be present within the BSA. One is located immediately to the west of the bleachers located at the Mira Costa High School football stadium, with an additional stand located outside of project bounds, along the northern edge of the BSA (**Exhibit VI**, *Vegetation Communities*).

Due to the tree canopy density and the general protection from the elements it affords, HANA concludes that the Eucalyptus stand located outside the project area to the north of the football stadium can potentially serve as overwintering habitat for the monarch butterfly. Additional details concerning the BSA's ability to sustain overwintering monarch butterflies and project considerations can be found in **Section 5.5**, *Wildlife*, within this BRE.

Impact on any species that may be using the borders of the school to move throughout the area or potentially nesting within trees would be mitigated by implementation of light operation schedules that minimize usage outside of the intended use for school or sporting events. Additionally, proper installation of lighting fixtures is recommended to ensure illumination is directed only upon designated areas within the confines of the school, football stadium, and playfields. Light poles and related fixtures to be installed as a result of project activities are therefore anticipated to have a less than significant impact on migrating or nesting species, as implemented controls will ensure resulting usage is kept to their intended purposes and minimized.

5.4. Plants

None of the forty-seven (47) sensitive plant species identified in the literature review were present within the BSA. Two (2) sensitive, but not listed, species have a low potential for occurrence, southern tarplant (*Centromadia parryi ssp. australis*) and paniculate tarplant (*Deinandra paniculata*), with the remaining forty-five (45) having no potential for occurrence. Focused surveys are required for any federal and/or state listed endangered species with potential to occur on site when the species is in bloom to ensure it is both evident and identifiable during the survey. Due to the survey area's developed and maintained nature, and its location in a suburban setting, there is no potential for occurrence for all but two (2) of the sensitive species identified in the literature review. The general reconnaissance survey was conducted and found no suitable habitat present for forty-five (45) out of forty-seven (47) of these sensitive species and found no sensitive plant species present within the BSA. No additional rare plant surveys are required.

Having a California Rare Plant Rank of 1B.1, Southern tarplant was not observed within the BSA, under its current blooming period of May to November. As paniculate tarplant has a California Plant Rare Rank of 4, this ranking refers to this plant having a limited distribution regionally within Southern California, and not it being a rare or endangered species. Southern tarplant and paniculate tarplant are not listed species under either the federal or state endangered species act, and do not require additional focused surveys or deployment of a specific mitigation plan.

5.5. Wildlife

Despite its developed setting, the BSA should be treated with the potential for general nesting by avian species to occur. Nesting conducted by general bird species is possible throughout the BSA, including within individual trees or high up on school buildings with features such as overhangs and exposed pipes.

To minimize impacts, vegetation clearing or ground disturbing activities should be conducted during the non-breeding season (September 1 to February 14) in order to limit impacts to nesting birds. If vegetation clearing or ground disturbing activities need to take place during breeding season (February 15 through August 31), a pre-construction nesting bird survey(s) will be required in order to remain in compliance with the Migratory Bird Treaty Act. The survey should be conducted no more than three days prior to the start of work.

Of the ten (10) sensitive wildlife species identified in the literature review, two (2) have a moderate potential to occur, two (2) have a low potential to occur, and six (6) were determined to have no potential to occur within the BSA. These two (2) species of moderate potential are the federally endangered monarch butterfly and the American bumble bee. The two (2) species of low potential is the federally endangered Crotch's bumble bee and Southern California legless lizard.

As a species not listed as endangered or threatened under the ESA or CESA, no additional focused surveys are recommend for the American bumble bee. Similarity, due to a lack of habitat and site features that would fully support said species, no additional surveys are recommended to be conducted for the Crotch's bumble bee or southern California legless lizard.

The monarch butterfly is a migratory species whose potential for occurrence is limited to time of year. The BSA occurs within the overwintering range in coastal California. A *Eucalyptus* spp. stand that can provide suitable refuge to overwintering monarch butterflies is an estimated 150 feet from the northern most border of the proposed project area, and in the general vicinity of where one proposed light pole for the football stadium will be placed. Although the only suitable potential overwintering habitat is located outside of project bounds and will not be displaced or directly impacted by ground work, there is a potential for indirect disturbance from light and noise during the overwintering season (October to early February). To ensure full mitigation of this potential disturbance, it is recommended that light installation activities at the football stadium be conducted outside of the monarch overwintering season. If work must occur during this period, avoidance of the *Eucalyptus spp.* stand and an associated 150-foot buffer must be observed. Due to this specific stand missing ideal habitat features, such as a puddled water source, adherence to these mitigation measures is anticipated to reduce potential disturbance and noise impacts to a less than significant level for the overwintering monarch population.

SECTION 6. REFERENCES

Beach Cities Watershed Management Group

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APPENDIX A

SITE PHOTOGRAPHS



Photo 1: Site overview. View of current Administration building located on within southern portion of the project site, facing northwest.



Photo 2: Site overview. View of walkway along library in the southern portion of the BSA to be demolished with associated landscaping containing primarily non-native species, facing east.

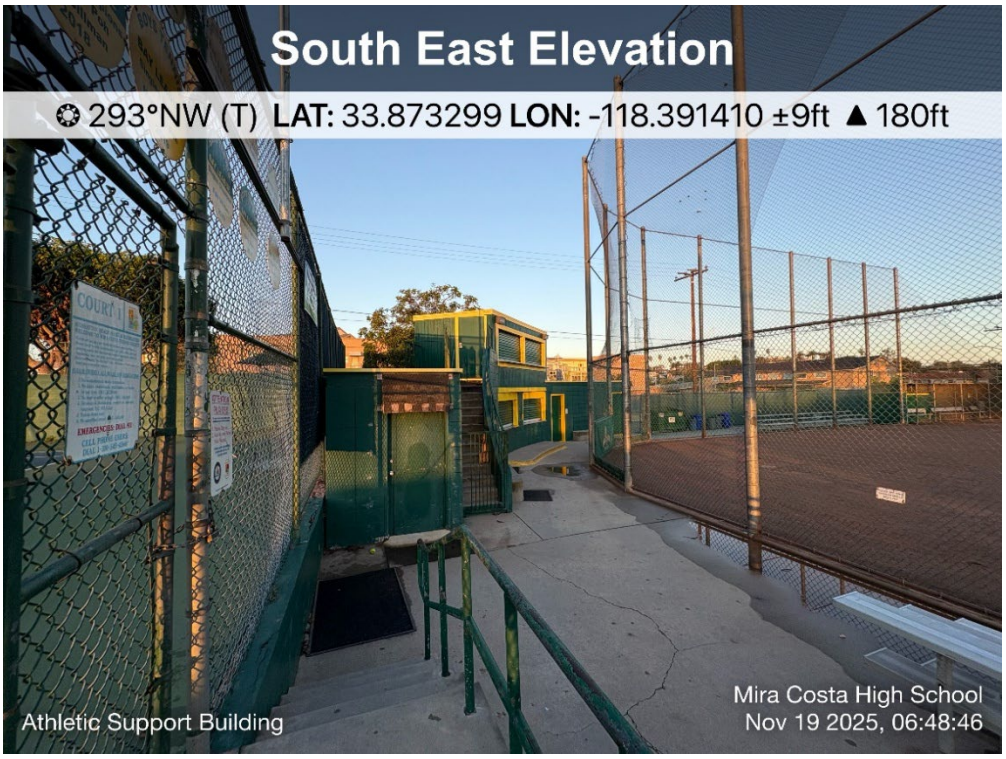


Photo 3: Site overview. View of proposed area for a new athletic support building, located in the southwestern portion of the BSA, facing northwest.



Photo 4: Site overview. Landscape present immediately to the south of proposed renovation of the school's swimming pool, facing southeast. Limited flowering species are present to support pollinators.

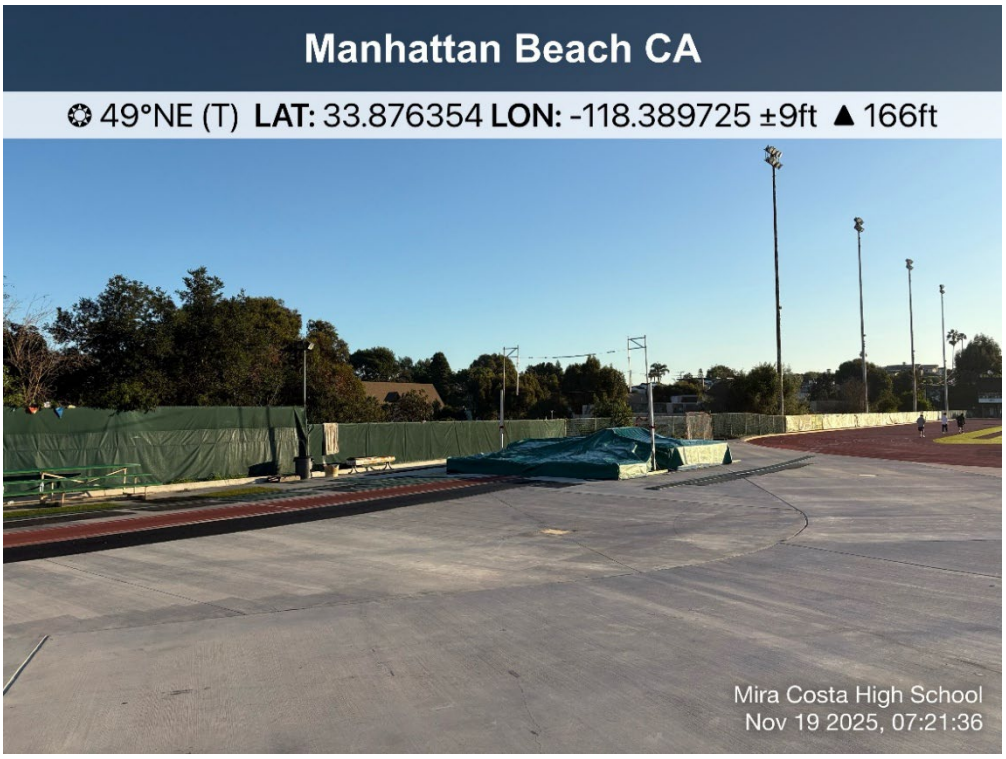


Photo 5: Site overview. View of general vicinity of one of four proposed light poles to be installed at Mira Costa HS football stadium, facing northeast.



Photo 6: **Site overview.** View of developed landscaping and trees present throughout school grounds, facing east. Species include Chinese elm (Ulmus parvifolia) and western sycamore (Platanus racemosa).



Photo 7: Site overview. Overview of western field located in the northwestern portion of the school, facing west. This area is bordered by residential developments across the street, depicted.



Photo 8: Site overview. Landscaping in the eastern portion of the Mira Costa HS football stadium, facing east. Species depicted includes *Pinus spp.* and common iceplant (*Mesembryanthemum crystallinum*).



Photo 9: Site overview. View along central school quad, in the centermost portion of the BSA, facing southwest. Depicted left of the western sycamore (*Platanus racemosa),* is a building to be demolished.



Photo 10: Site overview. View of a grassy area next to the school's baseball field to be turned into one of the proposed dedicated e-bike parking zones, facing north.



Photo 11: Site overview. View of general landscaping and location at the front of Mira Costa High School, along Arteria Blvd., facing northwest.



Photo 12: Site overview. View along S Peck Avenue, next to one 9-12th grader building with proposed modernization improvements, facing north.

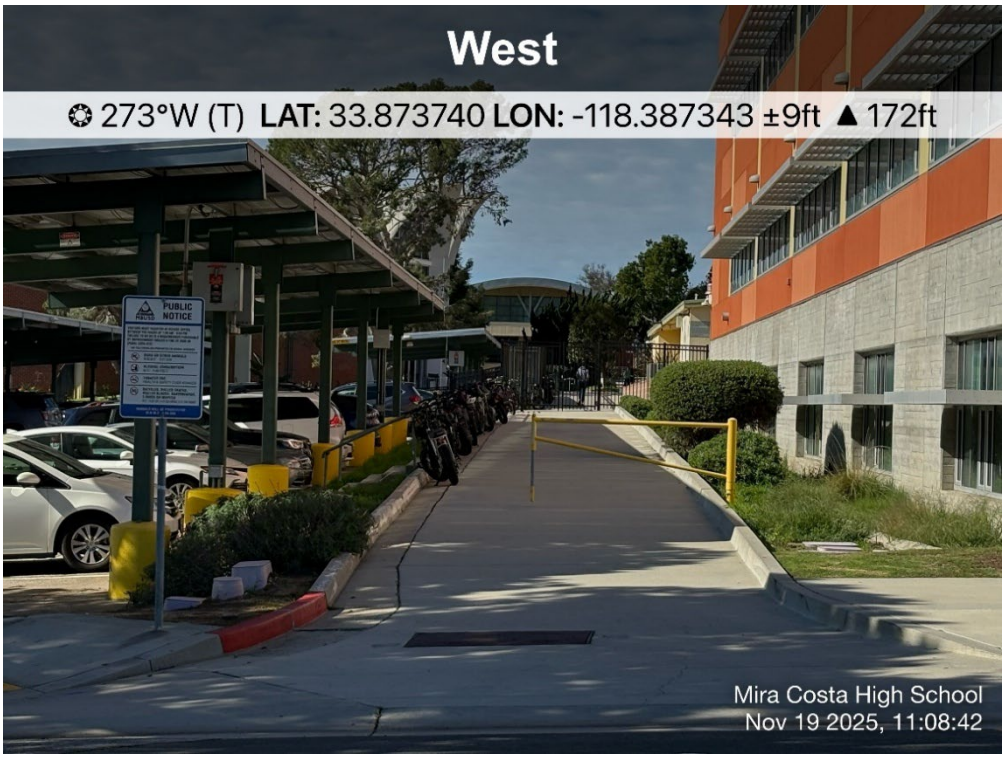


Photo 13: Site overview: View of one of the areas with proposed project e-bike parking, facing west.



Photo 14: Site overview. View along the border of the proposed project site and rest of the BSA, facing west along Artesia Blvd. and S Peck Avenue.



Photo 15: Site feature. View looking down into the western portion of the Wylie sump, facing south. This drainage is characterized by a high level of invasive plant species present.



Photo 16: Site overview. View facing southeast, near the corner of Voorhees and S Meadows Ave. The majority of the area outside of the high school is residential developments and associated landscaping.

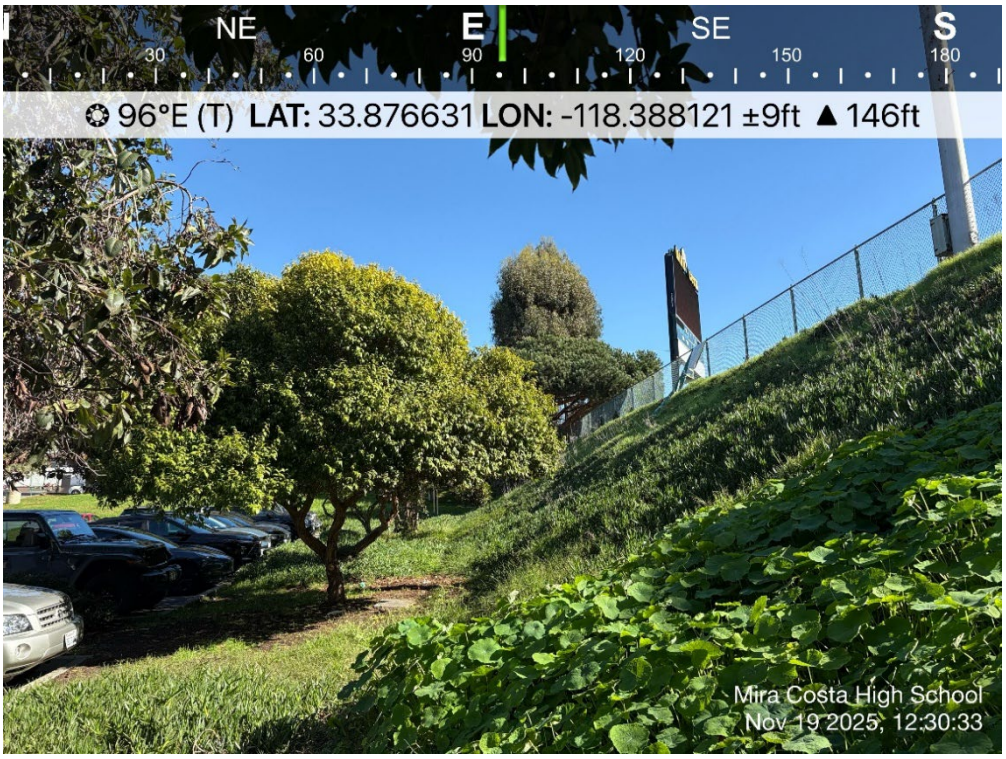


Photo 17: Site overview. View of slope located behind the northeastern portion of the Mira Costa HS football stadium, facing east.



Photo 18: Site overview. View of slope and parking lot directly behind Mira Costa HS football stadium, facing southwest. A *eucalyptus spp*. stand (not pictured) lies across this portion of the parking lot.



Photo 19: Site feature. Located to the north of the BSA and Mira Costa HS football stadium, this *Eucalpytus spp.* could potentially provide adequate refuge, facing northwest.

APPENDIX B

BIOLOGICAL RECONNAISSANCE SURVEY FIELD FORMS

Biological Reconnaissance Survey Field Form

Date	11/19/2025	Project Name	Mira Costa High School
Job #	7135	Client	Placeworks
Surveyor(s)	Jose Olvera		

LOCATION DESCRIPTION

Site Address	1401 Artesia Blvd	City, State	Manhattan Beach, CA
Habitat Types Present	Landscaping ornamental, recreational landscaping, ruderal		
Current Land Uses	Suburban residential, educational and recreational facilities, commercial		

Start of Survey

Time (24-hr)	630
Temp (ºF)	55
Cloud Cover (%)	0
Precipitation	0
Wind (mph)	3

End of Survey

Time (24-hr)	1230
Temp (ºF)	60
Cloud Cover (%)	0
Precipitation	0
Wind (mph)	5

NOTES: (Nest locations, species behavioral notes, disturbances, habitat conditions, etc)

Majority of vegetation on site is ornamental/non-native landscape varieties (ie. iceplant, succulents, boxbrush, chinese elm). Native vegetation primarily along boundaries and center quad portion of the school in the form of ruderal-landscaping (pine spp., western sycamore). Eucalyptus present, but tree heights towering over buildings and relatively low density of canopies due to pruning/maintence result in unfavorable overwintering habitat for monarch butterfly. School's maintains a small dedicated green space named "Ecoland"; contains a mix of non-native and native plants with small pond. No birds nests observed; variety of achitecture observed on school buildings to discourage nesting. Area alongside play fields primarily consists of non-native tree and herb layer on west and northern portion of site, along with residential developments and corresponding landscaping.

Biologist Certification



Biologist Signature

11/19/2025

Date

Plant Species Observations

PLANT SPECIES PRESENT Specify if species is Native (Y/N) if known	
Species	**Native? (Y/N)**
Trailing treasure flower	N
Saltgrass	Y
Akeake	N
Rosa spp. (ornamental roses)	N
Common sow thistle	N
Cheeseweed	N
London rocket	N
Black nightshade	N
Common ice plant	N
Coastal rosemary	N
Western Austrailian peppermint	N
Pampas grass	N
Pink breath of heaven	N
Toyon	Y
Pygmy date palm	N
Strawberry tree	N
Southern magnolia	N
Umbrella papyrus	N
Southern magnolia	N
Cape honeysuckle	N
Song of india	N
Date palm	N
Cast Iron plant	N
Crimson bottlebrush	N
Giant bird of paradise	N
Western sycamore	Y
African sumac	N
Coppery mesemb	N
Perez's sea lavender	N
Spotted spurge	N
Blue fescue	N
Common groundsel	N
Bur bristlegrass	N
Horseweed	Y
Olive	N
Panic veltgrass	N
Taupata	N
Marvel of Peru	N

PLANT SPECIES PRESENT Specify if species is Native (Y/N) if known	
Species	**Native? (Y/N)**
Coral aloe	N
Chinese flame tree	N
Succulent ragwort	N
Spiny-headed matrush	N
Common correa	N
Common myrtle	N
Chinese elm	N
Broad leaved paperbark	N
Sweet pea shrub	N
Lavender scallops	N
Tree aeonium	N
Heartleaf iceplant	N
Musk stork's bill	N
Common fig	N
South African coral tree	N
Aloe vera	N
Deergrass	Y
Annual meadow grass	N
Rosemary	N
Climbing fig	N
Sprenger's asparagus	N
Bird of paradise	N
Wax-leaf ligustrum	N
Camphor tree	N
Common chickweed	N
Chinese banyan	N
French lavender	N
Common asparagus fern	N
Tropical spiderwort	N
Bermuda grass	N
Canary island pine	N
Blueblossom	Y
Mexican bush sage	N
Garden Nasturtium	N
Austrialian brush box	N
Canary island ivy	N
Alkali Sacaton	Y
Bluestraws	N

PLANT SPECIES PRESENT Specify if species is Native (Y/N) if known	
Species	**Native? (Y/N)**
Petty spurge	N
Chinese juniper	N
Outeniqua Yellowwood	N
French broom	N
Calla lily	N
Indian hawthorn	N
Pride of Bolivia	N
Common dandelion	N
Waterlily spp.	N
Christmas senna	N
Creeping myoporum	N
Coast live oak	Y

PLANT SPECIES PRESENT Specify if species is Native (Y/N) if known	
Species	**Native? (Y/N)**
Ngaio	N
Society garli	N
Jade plant	N
Paris daisy	N
Elephant bush	N
Natal plum	N
Fountain grass	N
Large fortnight lily	N
Golden canna	N
Blue potatobush	N
Nettleleaf goosefoot	Y
Pinus spp.	N

Wildlife Species Observations

WILDLIFE SPECIES PRESENT Specify observation type as aural (a), signs (s), or visual (v)	
Species	**Observation**
American crow	A
Yellow-rumped warbler	A
Western gull	A
Cedar waxwing	A
American pipit	A
White-crowned sparrow	A
House finch	A
Allen's Humingbird	A
Black phoebe	A
Red-shouldered hawk	A
Song sparrow	A
Mitred parakeet	A
Dark-eyed junco	A
Lesser goldfinch	A
House sparrow	A
Common raven	A
Say's phoebe	A
Anna's humingbird	A
Mourning dove	A
Western fence lizard	V
Eastern fox squirrel	V

WILDLIFE SPECIES PRESENT Specify observation type as aural (a), signs (s), or visual (v)	
Species	**Observation**

APPENDIX C

PLANT & WILDLIFE SPECIES OBSERVED/DETECTED ONSITE

PLANT SPECIES OBSERVED			
Family	**Scientific Name**	**Common Name**	**Non-Native**
EUDICOTS			
Aizoaceae	*Carpobrotus spp.*	Ice plant	X
	Malephora crocea	Coppery Mesemb	X
	Mesembryanthemum cordifolium	Heart-leaf ice plant	X
Anacardiaceae	*Searsia lancea*	African sumac	X
Apocynaceae	*Carissa macrocarpa*	Natal plum	X
Araliaceae	*Hedera canariensis*	Canary ivy	X
Asteraceae	*Curio tallinoides*	Bluestraws	X
	Erigeron canadensis	Canada horseweed	
	Euryops chrysanthemoides	Paris daisy	X
	Gazania rigens	Trailing treasureflower	X
	Senecio barbertonicus	Succulent ragwort	X
	Senecio vulgaris	Common groundsel	X
	Sonchus oleraceus	Common sow thistle	X
	Taraxacum officinale ssp. officinale	Common dandelion	X
Bignoniaceae	*Tecoma capensis*	Cape honeysuckle	X
Brassicaceae	*Sisymbrium irio*	London rocket	X
Caryophyllaceae	*Cerastium fontanum ssp. vulgare*	Common chickweed	X
Chenopodiaceae	*Chenopodium murale*	Nettle leaf goosefoot	X
Crassulaceae	*Aeonium arboreum*	Tree aeonium	X
	Crassula ovata	Jade plant	X
	Kalanchoe fedtschenkoi	Lavender Scallops	X
Ericaceae	*Arbutus unedo*	Strawberry tree	X
Euphorbiaceae	*Euphorbia maculata*	Spotted spurge	X
	Euphorbia peplus	Petty spurge	X
Fabaceae	*Caesalpinia gilliesii*	Bird of paradise	X
	Erythrina caffra	South African Coral Tree	X
	Genista monspessulana	French broom	X
	Senna pendula	Christmas Senna	X
	Tipuana tipu	Pride of Bolivia	X
Fagaceae	*Quercus agrifolia*	Coast live oak	
Geraniaceae	*Erodium moschatum*	Musk stork's bill	X
Lamiaceae	*Lavandula stoechas*	French lavender	X
	Rosmarinus officinalis	Rosemary	X
	Salvia leucantha	Mexican bush sage	X
	Westringia fruticosa	Coastal rosemary	X
Malvaceae	*Malva parviflora*	Cheeseweed	X
Moraceae	*Ficus carica*	Common fig	X
	Ficus microcarpa	Chinese banyan	X
	Ficus pumila	Climbing fig	X
Myrtaceae	*Agonis flexuosa*	Western Australian peppermint	X
	Callistemon citrinus	Crimson bottlebrush	X
	Leptospermum confertus	Brush box	X
	Melaleuca quinquenervia	Broad-leaved paperbark	X
	Myrtus communis	Myrtle	X
Nyctaginaceae	*Mirabilis jalapa*	Marvel of Peru	X

PLANT SPECIES OBSERVED			
Family	**Scientific Name**	**Common Name**	**Non-Native**
Oleaceae	*Ligustrum japonicum*	Wax-leaf ligustrum	X
	Olea europaea	Olive	X
Platanaceae	*Platanus racemosa*	Western sycamore	
Plumbaginaceae	*Limonium perezii*	Perez's sea lavender	X
Polygalaceae	*Polygala myrtifolia*	Myrtle leaf milkwort	X
Portulacaceae	*Portulacaria afra*	Elephant bush	X
Rhamnaceae	*Ceanothus thyrsiflorus*	Blueblossom	
Rosaceae	*Heteromeles arbutifolia*	Toyon	
	Rhaphiolepis indica	Indian hawthorn	X
	Rosa spp.	Rosa spp. (Ornamental roses)	X
Rubiaceae	*Coprosma repens*	Taupata	X
Rutaceae	*Coleonema pulchellum*	Pink breath of heaven	X
	Correa reflexa	Common correa	X
Sapindaceae	*Dodonaea viscosa*	Akeake	X
	Koelreuteria bipinnata	Chinese flame tree	X
Scrophulariaceae	*Myoporum laetum*	Ngaio	X
	Myoporum parvifolium	Slender myoporum	X
Solanaceae	*Lycianthes rantonnetii*	Blue potatobush	X
	Solanum nigrum	Black nightshade	X
Tropaeolaceae	*Tropaeolum majus*	Garden nasturtium	X
Ulmaceae	*Ulmus parvifolia*	Chinese elm	X
MAGNOLIIDS			
Cupressaceae	*Juniperus chinensis*	Chinese juniper	X
Pinaceae	*Pinus canariensis*	Canary island pine	X
Podocarpaceae	*Afrocarpus falcatus*	Outeniqua yellowwood	X
NYMPHAELES			
Nymphaeaceae	*Nyphaea spp.*	Waterlily spp.	X
MONOCOTS			
Amaryllidaceae	*Tulbaghia violaceae*	Society garlic	X
Araceae	*Zantedeschia aethiopica*	Callalily	X
Arecaceae	*Phoenix dactylifera*	Date palm	X
	Phoenix spp.	Date palm	X
Asparagaceae	*Asparagus aethiopicus*	Sprenger's asparagus	X
	Asparagus setaceus	Common asparagus fern	X
	Aspidistra elatior	Cast iron plant	X
	Lomandra longifolia	Spiny-headed mat-rush	X
	Sansevieria trifasciata	Snake plant	X
Asphodelaceae	*Aloe maculata*	Soap aloe	X
	Aloe striata	Coral aloe	X
Cannaceae	*Canna flaccida*	Golden canna	X
Commelinaceae	*Commelina benghalensis*	Tropical spiderwort	X
Cyperaceae	*Cyperus alternifolius*	Umbrella sedge	X
Iridaceae	*Dietes grandiflora*	Large fortnight lily	X

PLANT SPECIES OBSERVED			
Family	**Scientific Name**	**Common Name**	**Non-Native**
Poaceae	*Cortaderia selloana*	Pampas grass	X
	Cynodon dactylon	Bermuda grass	X
	Distichlis spicata	Saltgrass	
	Ehrharta erecta	Panic Veldtgrass	X
	Festuca idahoensis	Blue fescue	
	Muhlenbergia rigens	Deergrass	
	Pennisetum setaceum	Fountaingrass	X
	Poa annua	Annual blue grass	X
Poaceae	*Setaria adhaerens*	Bur bristlegrass	X
	Sporobolus airoides	Alkali sacaton	
Strelitziaceae	*Strelitzia nicolai*	Giant birds-of-paradise	X
GYMNOSPERMS			
Cupressaceae	*Juniperus chinensis*	Chinese juniper	X
Pinaceae	*Pinus canariensis*	Canary island pine	X
Podocarpaceae	*Afrocarpus falcatus*	Outeniqua yellowwood	X
Legend			
X= Non-native/invasive species			

WILDLIFE SPECIES OBSERVED		
Taxon	**Scientific name**	**Common Name**
Reptiles	*Sceloporus occidentalis*	western fence lizard
Birds	*Anthus rubescens*	American pipit
	Bombycilla cedrorum	Cedar waxwing
	Buteo lineatus	Red-shouldered hawk
	Calypte anna	Anna's humingbird
	Corvus brachyrhynchos	American crow
	Corvus corax	Common raven
	Haemorhous mexicanus	house finch
	Junco hyemalis	Dark-eyed junco
	Larus occidentalis	Western gull
	Melospiza melodia	Song sparrow
	Passer domesticus	House sparrow
	Psittacara mitratus	Mitred parakeet
	Sayornis nigricans	Black phoebe
	Sayornis saya	Say's phoebe
	Selasphorus sasin	Allen's Humingbird
	Setophaga coronata	Yellow-rumped warbler
	Spinus psaltria	lesser goldfinch
	Zenaida macroura	mourning dove
	Zonotrichia leucophrys	White-crowned sparrow

APPENDIX D

USDA NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY

United States Department of Agriculture

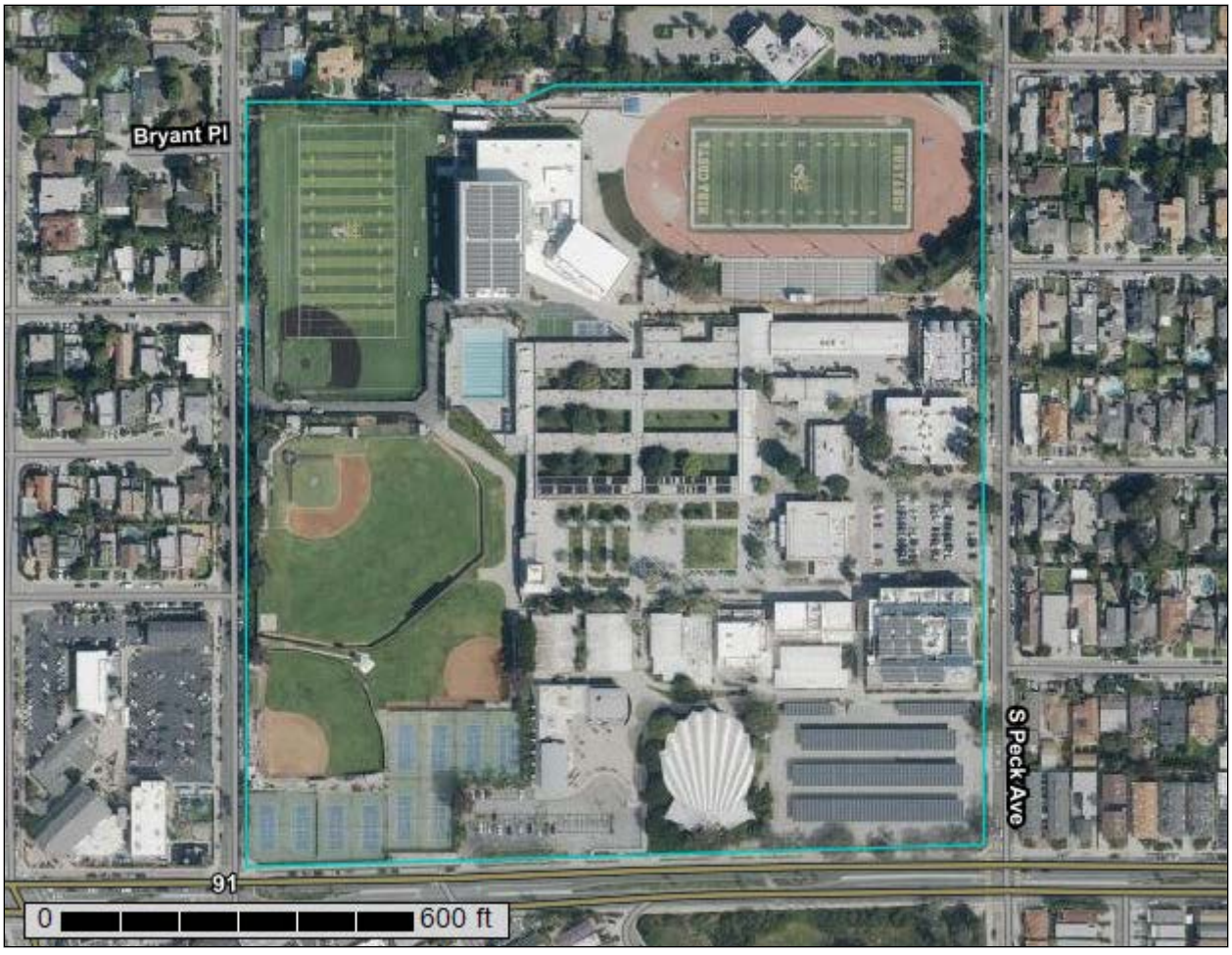
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Los Angeles County, California, Southeastern Part

1401 Artesia Boulevard, Manhattan Beach CA



November 24, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....12
Map Unit Descriptions.....12
Los Angeles County, California, Southeastern Part.....14
1152—Urban land-Abaft-Marina complex, 0 to 15 percent slopes.....14
References.....17

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

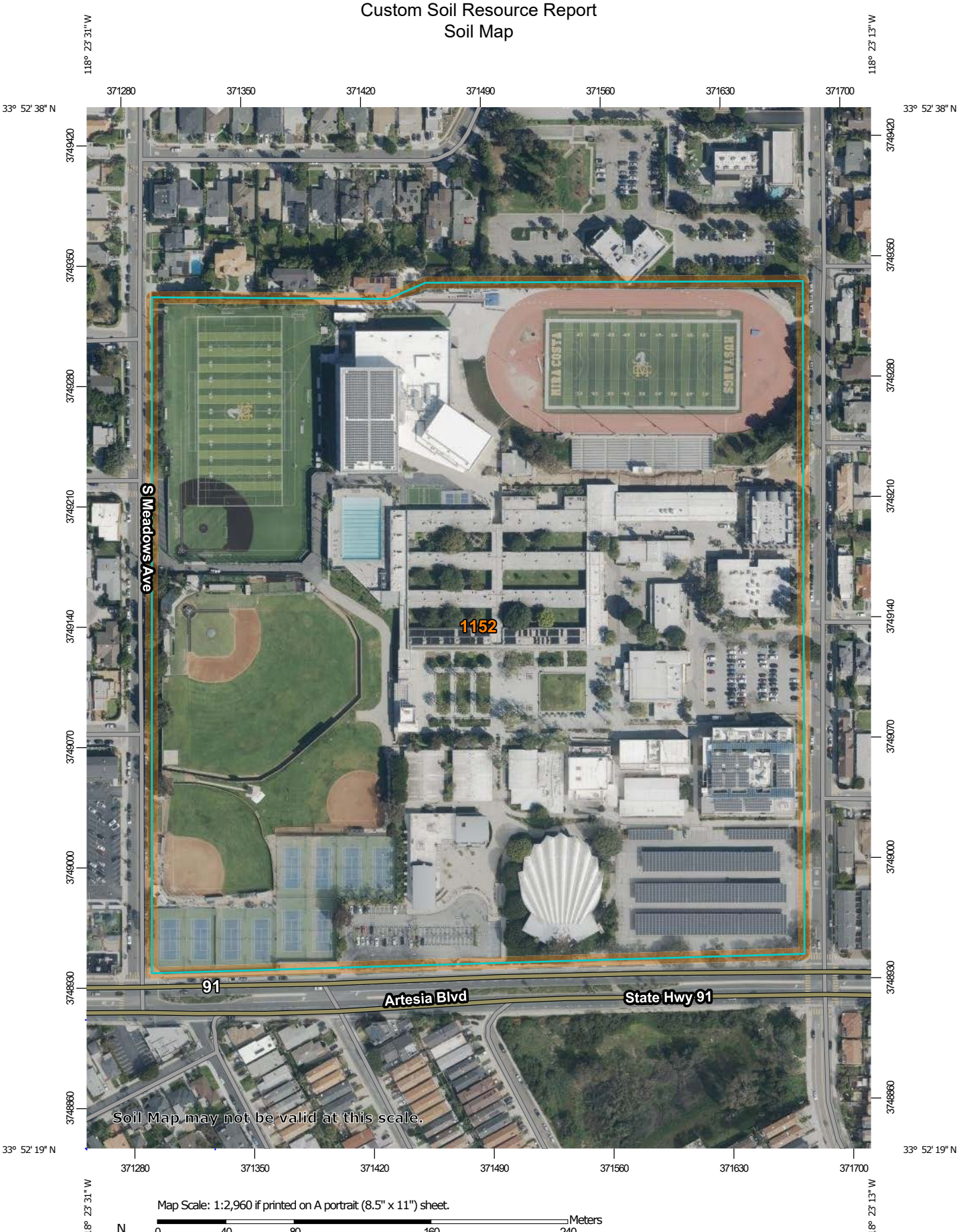
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:2,960 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 40 80 160 240

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Los Angeles County, California, Southeastern Part
Survey Area Data: Version 12, Sep 8, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2024—Jul 1, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1152	Urban land-Abaft-Marina complex, 0 to 15 percent slopes	37.1	100.0%
Totals for Area of Interest		**37.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Los Angeles County, California, Southeastern Part

1152—Urban land-Abaft-Marina complex, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2tb9d
Elevation: 10 to 450 feet
Mean annual precipitation: 13 to 14 inches
Mean annual air temperature: 62 to 64 degrees F
Frost-free period: 360 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 50 percent
Abaft and similar soils: 25 percent
Marina and similar soils: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Dunes

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Ecological site: R019XG904CA - Dunes
Hydric soil rating: No

Description of Abaft

Setting

Landform: Dunes
Landform position (three-dimensional): Side slope, base slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Discontinuous human-transported material over eolian sands

Typical profile

^A - 0 to 5 inches: sand
^Cu - 5 to 13 inches: sand
2C - 13 to 79 inches: sand

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R019XG904CA - Dunes
Hydric soil rating: No

Description of Marina

Setting

Landform: Dunes
Landform position (three-dimensional): Side slope, base slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Discontinuous human-transported material over eolian sands

Typical profile

^A - 0 to 5 inches: sandy loam
^Cu - 5 to 11 inches: sand
E and Bt1 - 11 to 51 inches: loamy sand
E and Bt2 - 51 to 79 inches: loamy sand

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 8.0
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R019XG904CA - Dunes
Hydric soil rating: No

Minor Components

Abaft, loamy surface

Percent of map unit: 5 percent
Landform: Dune fields
Landform position (three-dimensional): Side slope, base slope

Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Garey

Percent of map unit: 5 percent
Landform: Dunes
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

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APPENDIX E:
CULTURAL RESOURCES REPORT



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HISTORIC-PERIOD BUILDING EVALUATION

MIRA COSTA HIGH SCHOOL

1401 Artesia Boulevard, City of Manhattan Beach
Los Angeles County, California

Prepared For:

HANA Resources, Inc.
20361 Herman Circle
Lake Forest, CA 92630

For Submittal to:

Manhattan Beach Unified School District
325 S. Peck Avenue
Manhattan Beach, CA 90266

Prepared by:

CRM TECH
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Bai "Tom" Tang, Principal Investigator
Michael Hogan, Principal Investigator

September 12, 2025
Updated October 30, 2025
CRM TECH Contract No. 4287

Title: Historic-Period Building Evaluation: Mira Costa High School, 1401 Artesia Boulevard, City of Manhattan Beach, Los Angeles County, California

Author(s): Terri Jacquemain, Historian/Architectural Historian
Hunter O'Donnell, Archaeologist/Historian
Melissa Portillo, Archaeologist

Consulting Firm: CRM TECH
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Date: September 12, 2025; updated October 30, 2025

Prepared for: Sloan Sanchez, Director of Operations
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20361 Herman Circle
(949) 648-4988

For Submittal to: Manhattan Beach Unified School District
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Manhattan Beach, CA 90266
(310) 318-7345

USGS Quadrangle: Redondo Beach and Venice, 7.5' quadrangles; within the Rancho Sausal Redondo land grant, T3S R14W, San Bernardino Baseline and Meridian

Keywords: Southwestern Los Angeles County; South Bay area; Assessor's Identification Number 4168-002-906; Site 19-187799: Mira Costa High School, circa 1950; Samuel E. Lunden, architect; not a "historical resource" under CEQA provisions

EXECUTIVE SUMMARY

Between May and September 2025, CRM TECH performed a cultural resources evaluation on the Mira Costa High School campus located at 1401 Artesia Boulevard, City of Manhattan Beach, Los Angeles County, California. The property parcel occupied by the campus, Assessor's Identification Number 4168-002-906, is a portion of the Rancho Sausal Redondo land grant lying within Township 3 South, Range 14 West, San Bernardino Baseline and Meridian. The study is a part of the environmental review process for the proposed improvements outlined in the Mira Costa High School Facilities Master Plan, including replacement of the existing library, renovations to the multi-purpose/food service building, a classroom building, and the swimming pool, installation of two e-bike parking areas, and lighting enhancement on the baseball and football fields.

The Manhattan Beach Unified School District, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA). The purpose of the study is to provide the District with the necessary information and analysis to determine whether Mira Costa High School meets the CEQA definition of a "historical resource" and, thereby, whether the proposed improvements would cause "a substantial adverse change in the significance of a historical resource" (PRC §21084.1). In order to document the history, characteristics, and current conditions of the campus and assess its historical significance and integrity, CRM TECH conducted a historical/archaeological records search, pursued historical background research, and carried out a field inspection of the campus.

The results of these research procedures indicate that Mira Costa High School, the only high school in the Manhattan Beach Unified School District, opened in 1950 and subsequently underwent expansion and improvements through 1970, with another round of building and improvements occurring between 2000 and 2020. The school's auditorium was previously recorded into the California Historical Resources Inventory as Site 19-187799. During this study, Site 19-187799 was updated and expanded to include the entire Mira Costa High School campus. The campus as a whole was then evaluated against the criteria for the California Register of Historical Resources and was found not to be eligible for listing. As such, Mira Costa High School does not qualify as a "historical resource" for CEQA-compliance purposes.

Pursuant to PRC §21084.1, CRM TECH recommends to the Manhattan Beach Unified School District a conclusion that the proposed project's potential impact on the Mira Costa High School campus would not constitute "a substantial adverse change in the significance of a historical resource." No further cultural resources investigation is recommended for Mira Costa High School. However, if buried cultural materials are encountered during any earth-moving operations associated with the project, all work in the immediate area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds. Under this condition, CRM TECH further recommends that the proposed project may be cleared to proceed in compliance with cultural resources provisions of CEQA.

TABLE OF CONTENTS

EXECUTIVE SUMMARY i
INTRODUCTION 1
HISTORIC CONTEXT 4
RESEARCH METHODS 5
Records Search 5
Historical Background Research 5
Field Inspection 5
RESULTS AND FINDINGS 6
Records Search 6
Historical Background Research 6
Field Inspection 9
DISCUSSION 10
Statutory and Regulatory Guidelines 10
Significance Evaluation 11
CONCLUSION AND RECOMMENDATIONS 12
REFERENCES 14
APPENDIX 1: Personnel Qualifications 16
APPENDIX 2: California Historical Resources Inventory Record Forms and Update 20

LIST OF FIGURES

Figure 1. Project vicinity 1
Figure 2. Project location 2
Figure 3. Recent satellite image of the project location 3
Figure 4. Previous cultural resources studies 7
Figure 5. The project location and vicinity in 1894 7
Figure 6. The project location and vicinity in 1923 7
Figure 7. The project location and vicinity in 1942 8
Figure 8. The project location and vicinity in 1950-1951 8
Figure 9. Mira Costa High School in 1950 9
Figure 10. Mira Costa High School main entry 10

INTRODUCTION

Between May and September 2025, CRM TECH performed a cultural resources evaluation on the Mira Costa High School campus located at 1401 Artesia Boulevard, City of Manhattan Beach, Los Angeles County, California (Fig. 1). The property parcel occupied by the campus, Assessor's Identification Number 4168-002-906, is a portion of the Rancho Sausal Redondo land grant lying within Township 3 South, Range 14 West, San Bernardino Baseline and Meridian (Figs. 2, 3). The study is a part of the environmental review process for the proposed improvements outlined in the Mira Costa High School Facilities Master Plan, including replacement of the existing library, renovations to the multi-purpose/food service building, a classroom building, and the swimming pool, installation of two e-bike parking areas, and lighting enhancement on the baseball and football fields.

The Manhattan Beach Unified School District, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA). The purpose of the study is to provide the District with the necessary information and analysis to determine whether Mira Costa High School meets the CEQA definition of a "historical resource" and, thereby, whether the proposed improvements would cause "a substantial adverse change in the significance of a historical resource" (PRC §21084.1). In order to document the history, characteristics, and current conditions of the campus and assess its historical significance and integrity, CRM TECH conducted a historical/ archaeological records search, pursued historical background research, and carried out a field inspection of the campus. Personnel who participated in the study are named in the appropriate sections below, and their qualifications are presented in Appendix 1.

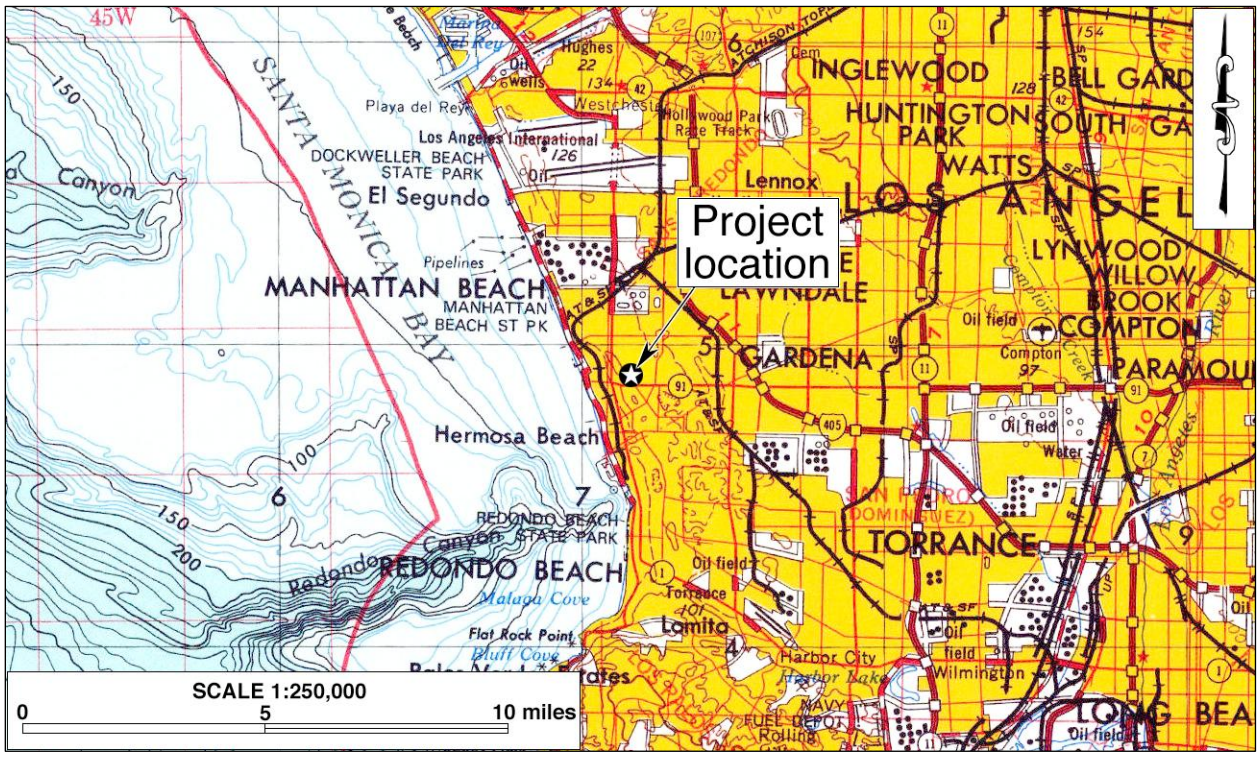

Figure 1. Project vicinity. (Based on USGS Long Beach, Calif., 120'x60' quadrangle [USGS 1978])

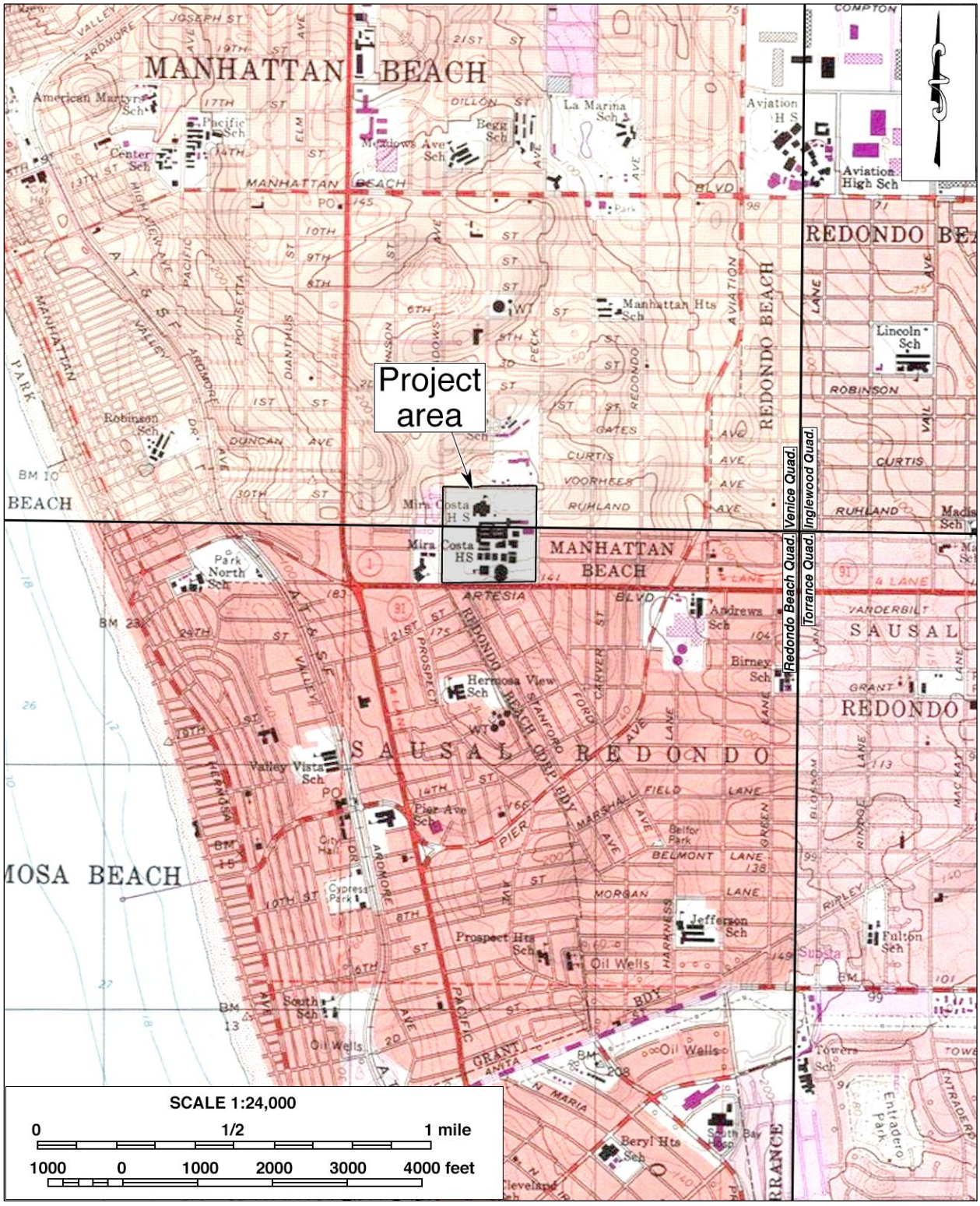

Figure 2. Project location. (Based on USGS Inglewood, Redondo Beach, Torrance, and Venice, Calif., 7.5' quadrangles [USGS 1981a-c; 1996])



Figure 3. Recent satellite image of the project location. (Based on Google Earth imagery)

HISTORIC CONTEXT

The Los Angeles Basin, including the South Bay area, was originally part of the Tongva (Gabrielino) people's traditional territory. In 1784, what is now the City of Manhattan Beach was included in a Spanish land concession known as Rancho Sausal Redondo, or "Round Clump of Willows," spanning from present-day Playa del Rey to Hermosa Beach. In 1863, Scottish immigrant Sir Robert Burnett acquired the land, leasing it in 1873 to Canadian Daniel Freeman, who later purchased it. In 1888, the Atchison Topeka and Santa Fe Railway was first to connect the Redondo Beach wharf to downtown Los Angeles. Soon Manhattan Beach forerunner Potencia was a rail stop, later becoming Shore Acres (City of Manhattan Beach 2003:3; Chamber of Commerce n.d.).

Manhattan Beach was founded in 1901 on the vision of brothers John and Stewart Merrill, who bought the southern, sand dune dominated portion of Rancho Sausal Redondo and renamed it Manhattan Beach after a Coney Island resort in their home state of New York. The northern portion was the remaining Shore Acres, owned by George Peck. The City of Manhattan Beach incorporated in 1912 with 600 residents and early infrastructures that included a pier and wood planking roads along "The Strand," along with a school and a water system (Chamber of Commerce n.d.).

The sturdy 1901 pier was washed out by a storm in 1913. Another pier was built in 1920, this one with a roundhouse at the end that despite similar periodic storm battering has been repaired and reconstructed over the years to become California State Historic Monument No. 1018 (City of Manhattan Beach 2003:3-4). Beside the Santa Fe, in 1903 the Pacific Electric Railway laid tracks along The Strand and started service from Manhattan Beach to Hill Street in downtown Los Angeles (City of Manhattan Beach n.d.). Both rail services were often delayed due to blowing sand. In an effort to tame the dunes, sand was carted to help build the Memorial Coliseum in Los Angeles and moved by barge to help bolster Waikiki Beach in Hawaii (*ibid*.).

In 1913, the Manhattan Beach City School District was formed, and construction began on Center School (now Pacific Elementary School) at the corner of Center Street (Manhattan Beach Boulevard) and Pacific Avenue, opening in 1914 with 43 students, four classrooms, and two teachers. Until Mira Costa High School opened in 1950, the District had only elementary schools in its jurisdiction. Efforts to bring public schools of all grades under one district umbrella began in the 1960s but were not successful until 1992, when a voter proposition approved formation of Manhattan Beach Unified School District and Redondo Beach Unified School District (MBUSD n.d.).

Many of Manhattan Beach's early buildings were beach cottages, and a number of those were seasonal residents (City of Manhattan Beach 2003:5). One early resort in the early 1900s was Bruce's Beach, opened for African American beachgoers in 1912 and owned by Willa and Charles Bruce. In 1924, the city claimed the property through eminent domain and paid the Bruces $14,500 instead of their $120,000 claim. In recent years, Los Angeles County initiated efforts to return the land to the Bruce family's descendants (County of Los Angeles n.d.).

During World War II, military personnel assigned to Pacific coastal wartime installations became enamored of the beach community lifestyle and often returned as residents after the war (City of Manhattan Beach 2003:5.). As in the rest of the nation, the post-war era brought prosperity, rapid population increase, and a boom in urban/suburban development as domestic growth usurped war

efforts. Manhattan Beach's role as an established residential community with upscale homes and modern commercial and retail centers was fortified in that process. In 1980, the City annexed 34 acres of county land consisting of the area known as El Porto, a popular surf spot, and in 1981, the Manhattan Village Mall opened (City of Manhattan Beach 2003:6). Since then, Manhattan Beach, like other South Bay cities, have expanded residential development, and in doing so have taken on the characteristics of a "bedroom community" in support of the Greater Los Angeles area. As of 2020, the city's total population stood at approximately 35,000, distributed over almost four square miles (USCB n.d.).

RESEARCH METHODS

RECORDS SEARCH

The historical/archaeological resources records search for this study was completed on June 5, 2025, by CRM TECH archaeologist Eulices Lopez at the South Central Coastal Information Center at California State University, Fullerton. The purpose of the records search was to compile a complete inventory of previously identified cultural resources and existing cultural resources reports in the project vicinity. Previously identified cultural resources include properties designated as California Historical Landmarks or Points of Historical Interest as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory. The scope of the records search extended to a one-mile radius of the project location. Due to the limited potential for the proposed project to impact known cultural resources in this densely urbanized area, however, the records search results presented below is limited to a quarter-mile radius instead.

HISTORICAL BACKGROUND RESEARCH

Historical background research for this study was conducted by CRM TECH historian/architectural historian Terri Jacquemain on the basis of published literature in local and regional history, U.S. Geological Survey (USGS) topographic maps dated 1896-1996, and aerial/satellite photographs of the Manhattan Beach area taken between 1952 and 2025, which are accessible through the Google Earth software and at the Nationwide Environmental Title Research (NETR) Online website. For information specific to Mira Costa High School and the District, Jacquemain and CRM TECH archaeologist/historian Hunter O'Donnel supplemented these sources with historical and contemporary news accounts and online genealogical and architectural databases.

FIELD INSPECTION

The field inspection of the Mira Costa High School campus was conducted on July17, 2025, by Hunter O'Donnell and CRM TECH archaeologist Melissa Portillo. To facilitate their proper documentation and evaluation, O'Donnell and Portillo made detailed notations and preliminary photo-recordation structural and architectural characteristics, notable features, and current conditions of the historical components of the campus. The field data were then compiled into standard record forms prepared for the school (see App. 2) and, along with the results of other research procedures, form the basis of the significance evaluation and historic integrity assessment presented in the sections below.

RESULTS AND FINDINGS

RECORDS SEARCH

According to SCCIC records, the Mira Costa High School auditorium was recorded into the California Historical Resources Inventory in 2006 during a cultural study required prior to placing wireless telecommunications apparatus on the building and was subsequently designated Site 19-187799 in the he California Historical Resources Inventory (see App. 2). The auditorium, a dramatically stylized circa 1960 "clamshell" building standing on the southern portion of the campus, was evaluated for listing in the National Register of Historic Places at that time and found not to meet any of the criteria (Crawford 2006:3).

Within a quarter-mile radius, five additional studies were reported to the SCCIC (Fig. 4). One of them was for an overview study completed in 1993 for a water reclamation project that included the entire area within the records search scope (not shown in Fig. 4), two of them covered all or portions of Hermosa View Elementary School to the southeast of the high school, and the other two covered small areas to the southwest, in the neighboring City of Redondo Beach. Despite these past survey efforts, SCCIC records indicate no additional historical/archaeological cultural resources within the quarter-mile scope. However, at least one of the two studies on Hermosa View Elementary School prior to its revamping in 2022 (Google Earth 2022) likely resulted in it being recorded into the inventory, and the record is likely yet to be processed by the SCCIC.

HISTORICAL BACKGROUND RESEARCH

Historical sources consulted during this study suggest that the project location appears to be low in sensitivity for any cultural resources predating the construction of Mira Costa High School in 1950 (Figs. 5-8). In the early 1890s, the only manmade features noted on the otherwise barren landscape nearby were a few roads and the Atchison Topeka and Santa Fe Railway, built in 1888 to connect the Redondo Beach wharf to downtown Los Angeles (Fig. 5). During 1920s-1940s, as suburban development gradually spread to the surrounding area, the present-day school site became a part of the last undivided remnant of Rancho Sausal Redondo (Figs 6, 7). In early 1940, the property was held by the Pacific Land and Title Company (*Hermosa Beach Review* 1940; *Redondo Reflex* 1940).

In June of 1940, Star Nursery Company owner Francis Miyosaku Uyematsu, the acclaimed "Camellia King" at the time, purchased 110 acres in Manhattan Beach from the Pacific Land and Title Company for $60,000 (*Hermosa Beach Review* 1940; *Redondo Reflex* 1940). Uyematsu came to the United States from Japan in 1904 and was selling flowers at the Figueroa Street Nursery by 1909 (*Tidings* 1909). Meanwhile, he established the Star Nursery in 1908 in Montebello, where he built a two-story house, and had expanded with another nursery in Sierra Madre by the mid-1920s (*Tidings* 1909*; Southwest Wave* 1942; *Los Angeles Times* 2006). By all accounts, Uyematsu was highly successful and known for his ornamental plants and flowers.

After the Japanese attack on Pearl Harbor, Uyematsu and his family were forced to relinquish control of their property before being relocated, first to the Pomona Assembly Center at the Los Angeles Fairgrounds and then to Manzanar Internment Camp in Owens Valley (*Los Angeles Times* 2006). Uyematsu salvaged 300,000 of his prized camelias by selling them to Manchester Boddy,

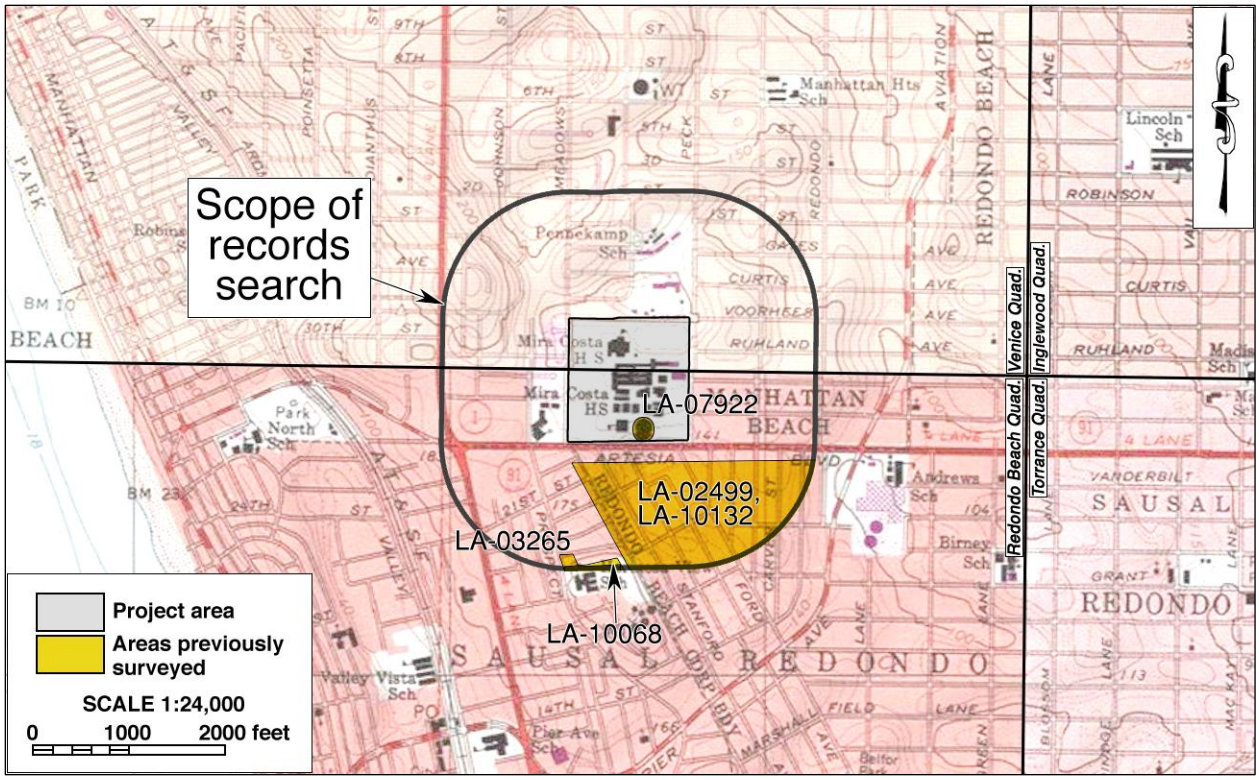

Figure 4. Previous cultural resources studies in the vicinity of the project area, listed by SCCIC file number. Locations of known historical/archaeological resources are not shown as a protective measure.

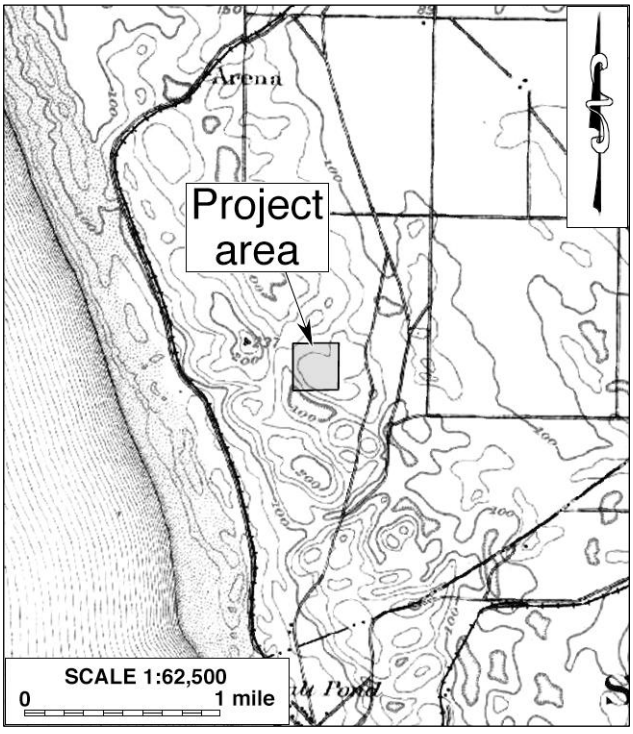

Figure 5. The project location and vicinity in 1894. (Source: GLO 1896)

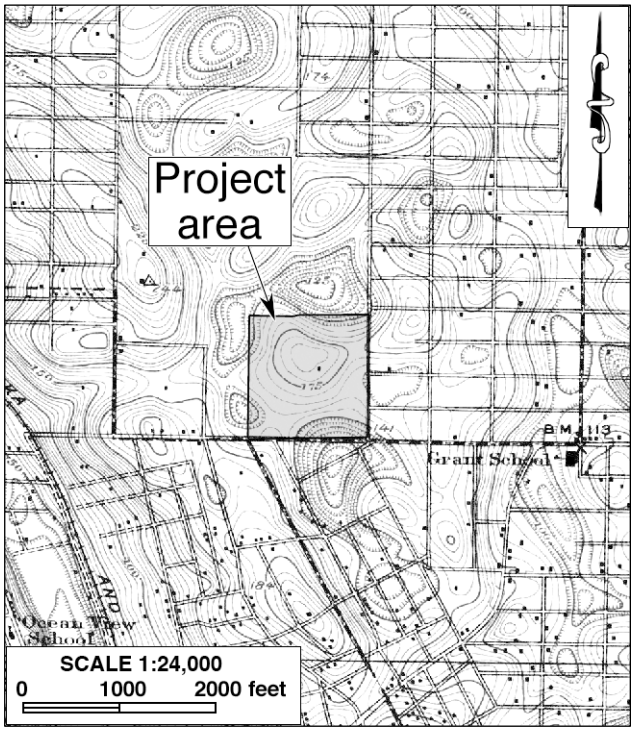

Figure 6. The project location and vicinity in 1923. (Source: USGS 1924)

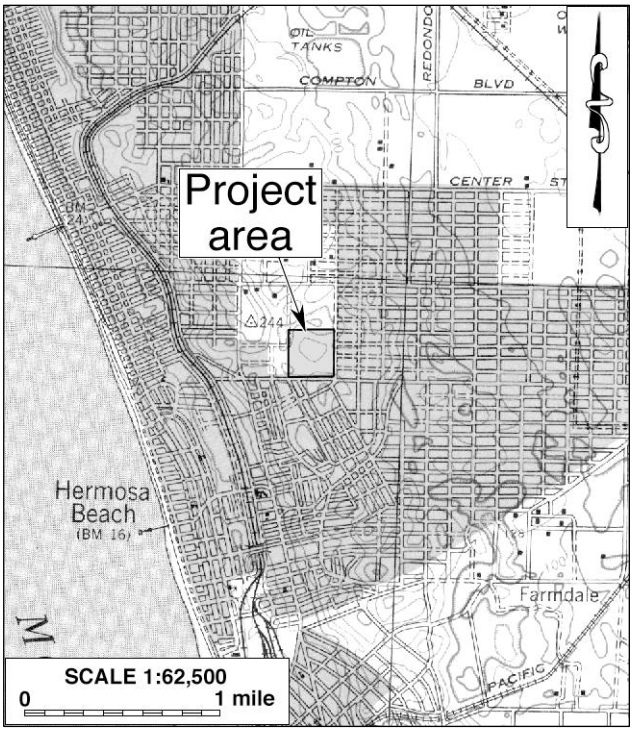

Figure 7. The project location and vicinity in 1942. (Source: USGS 1944).

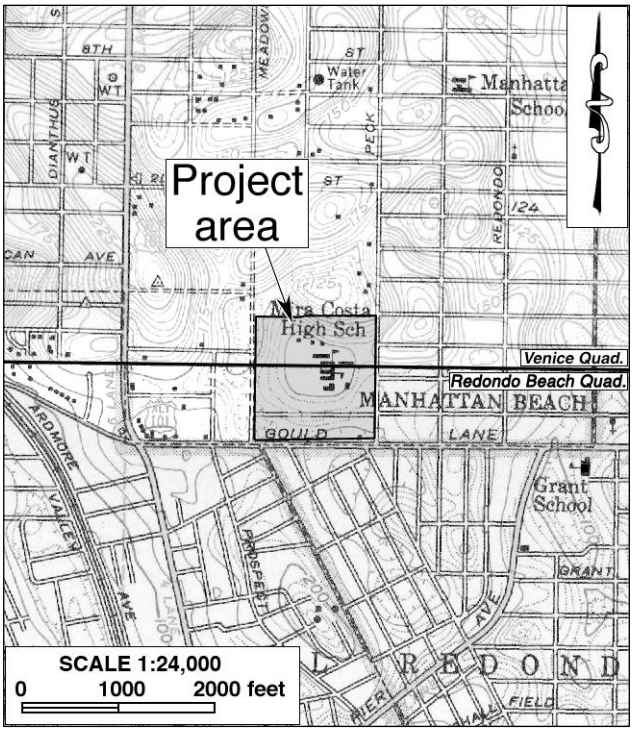

Figure 8. The project location and vicinity in 1950-1951 (Source: USGS 1950; 1951).

publisher of *The Los Angeles Daily News*, whose estate would become the famed Descanso Garden. Uyematsu donated 1,000 Japanese cherry trees to Manzanar, where he used them to create Cherry Park near the "Children's Village" at the camp (*ibid*.). By the end of the war, Uyematsu retained only 40 acres of his land in Manhattan Beach. In an effort to sustain solvency, Uyematsu sold the parcel to the Redondo Union High School District in 1947 for $60,000 (Gnerre n.d.).

Plans for Mira Costa High School were revealed in late 1948 with a grouping of "finger buildings"—long rectangular classroom buildings—being the core of the campus (Daily Breeze 1948). The architect chosen was Samuel E. Lunden (1897-1995), a versatile professional who was responsible for such landmark buildings as the Los Angeles Stock Exchange (1931) and the Doheny Memorial Library at the University of Southern California (1932; Oliver 1995). The name "Mira Costa" was selected by the Redondo Union High School board of trustees in January 1949, along with names for a slew of the buildings in honor of longtime teachers and administrators. Ultimate enrollment was expected to reach 2,000-2,500 students (*Daily Breeze* 1949a; 1949b). The $646,084 contract for construction of the school was awarded to the Curlett Construction Company (*Daily Breeze* 1949c).

Groundbreaking took place on May 24, 1949, and by July enough classrooms were completed to hold summer school art classes (*Daily Breeze* 1949d; 1949e). When the first classes of the regular school year began on September 7, 1950, the campus consisted of "an assembly-library-study hall building, 20 classrooms, an administrative building, health unit, shop building, office and dressing rooms for physical education class…two grass playfields, one for boys and one for girls…eight paved tennis courts, 10 volleyball courts, and nine basketball courts," with future plans for "14 more

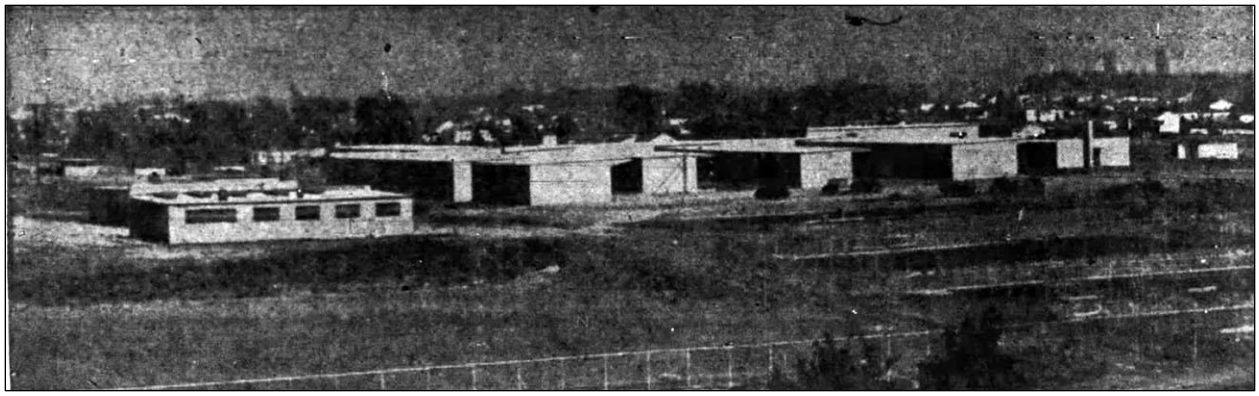

Figure 9. Mira Costa High School at opening in 1950, with the "finger buildings" on right side still under construction. (Source: *Daily Breeze* 1950a)

classrooms, two shop buildings, an auditorium-gymnasium, and a cafeteria building" (Fig. 6; *Daily Breeze* 1950a). Lloyd W. Waller, the former dean of Redondo High School Junior College and championship football coach for Redondo High School, was the first principal at Mira Costa High School with a staff of 30 teachers (*Daily Breeze* 1950b; 1950c). Construction and improvements on the campus continued through 1970 and then began again in 2000:

- 1953-1956: More classrooms, a music room, a workshop, a library; two wings added to the "finger buildings," and an addition to the cafeteria. Construction of a baseball field near the western property boundary and a football field in the northeast corner, along with later improvements that included a press box and seating for 5,000 (NETR Online 1952; 1953; *Daily Breeze* 1954a; 1954b; 1955; 1956).
- 1960-1962: The "clamshell" auditorium designed by architects Flewelling and Moody began construction in 1960 at a cost of over 750,000 dollars and was completed in 1962 (*Los Angeles Times* 1960; *Daily Breeze* 1961; 1962).
- 1967-1970: 12 classrooms, additions to the counseling offices, industrial arts building, library and auto shop; remodels to the coaches' offices, locker rooms, and gyms; a home economics building and a large group instruction building and a two-story building along the eastern edge of the campus (*Daily Breeze* 1967; 1969; 1970; *Hermosa Beach Review* 1969).
- 2000-2020: This most recent phase has largely been an effort to replace outdated buildings with modern ones with sleek designs and prominent exteriors, including a new two-story building in the northeastern portion of the campus (2000-2003); Student Services (2003-2004); the "Small Theater" (2014-2016); Building L (Math/Science; 2012-2014) and Food Services ("Beach Café"); Building G and the quad (2014-2016); and the Mira Costa Sports Complex (2018-2020; NETR Online 2000-2022; Google Earth 2000-2025). A plaque dedicated to Uyematsu was placed in a courtyard on campus in 2021.

FIELD INSPECTION

Mira Costa High School occupies a roughly square-shaped, approximately 40-acre parcel located on the north side of Artesia Boulevard (State Route 91) and between Meadows Avenue and Peck Avenue. The Manhattan Beach Unified School District headquarters is located on the adjoining property to the northeast. Still extant on campus from the initial construction are the five "finger



Figure 10. Mira Costa High School main entry. (Source: Google Street View, June 2024)

buildings," five other buildings, the football field with its snack stand, and the main baseball field. The buildings are all generally one-story, rectangular structures with flat roofs on concrete foundations, as are the classrooms and library added in 1953-1956. These 1950s buildings, along with those from the 1960s and 1970s, retain sufficient historical character (Fig. 10) to warrant recording of the campus as a whole into the California Historical Resources Inventory as an update to Site 19-187799, the 2006 recordation of the auditorium (Crawford 2006). Further descriptions of the campus and individual buildings that contribute to the historical character of the campus are presented in the standard record forms for the inventory, which are attached to this report in Appendix 2.

DISCUSSION

STATUTORY AND REGULATORY GUIDELINES

As stated above, the purpose of this study is to assist the Manhattan Beach Unified School District in determining whether Mira Costa High School at 1401 Artesia Boulevard meets the official definition of a "historical resource," as provided in the California Public Resources Code, in particular CEQA. According to PRC §5020.1(j), "'historical resource' includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California."

More specifically, CEQA guidelines state that the term "historical resources" applies to any properties listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the lead agency (Title 14 CCR §15064.5(a)(1)-(3)). In other words, buildings, structures, sites, or districts that belong to one or more of the following three categories are to be considered "historical resources" for the purposes of CEQA compliance (160 Cal. App. 4th 1051):

- Mandatory historical resources: properties that are listed in or formally determined to be eligible for listing in the California Register of Historical Resources;

- Presumptive historical resources: properties that are designated in an officially established local register, recognized by local ordinance, resolution, or general plan, or identified in a local survey prepared in accordance with PRC §5024.1(g), unless determined not to be historically or culturally significant by the lead agency upon a preponderance of the evidence;
- Discretionary historical resources: properties that are determined to be historically significant in the lead agency's discretion, independent of any decision to list or designate them in a national, state, or local register of historical resources.

Regarding the proper criteria of historic significance evaluation of potential "discretionary historical resources," CEQA guidelines mandate that "generally a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1(c))

Since Mira Costa High School has not been listed in the California Register of Historical Resources, formally determined eligible for such listing, or designated in an officially established local register, it does not meet the definition of a "historical resource" in the "mandatory" or "presumptive" category. Therefore, it is evaluated during this study as a potential "discretionary historical resource."

SIGNIFICANCE EVALUATION

Mira Costa High School was opened in 1950 as the first high school minted by the newly formed Manhattan Beach Unified School District. The campus underwent significant and continuous expansion in 1950-1970 and again in 2000-2020. Today, the 1950-1970 buildings appear to be architecturally compatible to their period of construction and have reached the 50-year age threshold for consideration as potential "historical resources" under CEQA provisions. Therefore, the period of significance for the campus is set to be from 1950 to 1970. The following evaluation assesses the historical significance of the school campus against the criteria above to determine whether the school qualifies as a "historical resource" under CEQA in response to planned and future projects that may involve alterations or demolition of existing buildings on the campus.

Mira Costa High School was built to serve a rapidly growing suburban population in Manhattan Beach during the post-World War II boom. As such, its origin and early history are directly associated with the phenomenal urban/suburban expansion at the time, an event—or pattern of events—that left a lasting impact on the history of the U.S. and particularly southern California. As one of numerous public education institutes in the region of similar vintage, however, it does not demonstrate a unique or particularly close association with that event or historic theme. The school's history reflects typical educational activities and community involvement, such as student organizations and extracurricular programs, but these are not unique or exceptional in the context of

California's educational system. No specific events of distinctive significance, such as nationally recognized achievements or groundbreaking educational reforms, have been identified in association with the school that would elevate its historical importance. Therefore, Mira Costa High School does not appear to meet California Register Criterion 1.

Similarly, historical background research during this study has not identified any persons of recognized significance in national, state, regional, or local history in close association with Mira Costa High School. While a number of the buildings and other facilities are named after administrators, teachers and, in the case of the main baseball field, a former student in the local school system, there is no evidence that any of them attained the level of historic significance required by the California Register. Most of the buildings, in fact, were named after individuals who were not directly associated with Mira Costa High School, purely for commemorative purposes. Therefore, Mira Costa High School does not appear to meet California Register Criterion 2.

The architecture of the 1950-1970 campus reflects mid-20th century Modernist influences, a style ubiquitous in California—and indeed throughout the U.S. and the world—during the post-war decades. The portions of the campus from that period feature functional, mostly single-story buildings with minimal ornamentation, typical both of the style and of the emphasis on cost-effective, standardized school construction to accommodate rapid population growth. However, the school and its buildings do not stand out as an important example of the Mid-Century Modernist movement in architecture, nor do they exhibit a particularly high level of artistic value or any other distinctive merits to distinguish it from the numerous similar school campuses of similar age in southern California.

The architect associated with the original buildings on campus, Samuel E. Lunden, was nationally known and for his outstanding achievements in architecture, including several well-known works that are now listed in the National Register of Historic Places. While Lunden undoubtedly qualifies as a master architect, Mira Costa High School, with its relatively common design for post-World War II educational institutes and other office buildings, is not known to be an important, exemplary, or especially innovative example of his work in comparison to the better recognized edifices elsewhere in southern California. For these reasons, Mira Costa High School does not appear to meet California Register Criterion 3.

Lastly, as a common late-historic-period to modern-era facility, Mira Costa High School is unlikely to yield information important to the study of educational or local history, for which published materials, contemporary sources, and archival records are readily available, or to contribute otherwise to historical or architectural research. Consequently, it does not appear to meet California Register Criterion 4. Based on these considerations, Mira Costa High School does not appear eligible for listing in the California Register of Historical Resources and thus does not qualify as a "historical resource" in the category of "discretionary historical resources."

CONCLUSION AND RECOMMENDATIONS

CEQA establishes that "a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition,

destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

In summary of the research results outlined above, the Mira Costa High School auditorium was previously recorded into the California Historical Resources Inventory in 2006 and designated as Site 19-187799. During this study, Site 19-187799 was updated and expanded to include the entire Mira Costa High School campus. The campus as a whole was then evaluated against the criteria for the California Register of Historical Resources and was found not to be eligible for listing. As such, Mira Costa High School does not qualify as a "historical resource" for CEQA-compliance purposes.

Pursuant to PRC §21084.1, CRM TECH recommends to the Manhattan Beach Unified School District a conclusion that the proposed project's potential impact on the Mira Costa High School campus would not constitute "a substantial adverse change in the significance of a historical resource." No further cultural resources investigation is recommended for Mira Costa High School. However, if buried cultural materials are encountered during any earth-moving operations associated with the project, all work in the immediate area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds. Under this condition, CRM TECH further recommends that the proposed project may be cleared to proceed in compliance with cultural resources provisions of CEQA.

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1949a "Mira Costa" Name of New High School. January 19:1.

1949b State Allocates Funds for Mira Costa High School. March 10:1.

1949c Award High School Contract. May 18:1.

1949d Ground Broken at Mira Costa High Site. May 24:1.

1949e School Renders Progress Report. July 6:1.

1950a Everything New at Manhattan School Site. September 1:3.

1950b Skipper Waller Crawls Aboard Commissioned Manhattan Ship. September 1:16.

1950c First Students Enter Mira Costa High. September 12:20.

1954a Bids on Two High School Projects under Estimates. August 21:1.

1954b New Mira Costa Music Building Ready Next Fall. February 25:5.

1955 Legals and Proposals. May 21:7.

1956 Mira Costa Work Ups Valuations. May 26:12.

1961 Unique Design. January 5:17.

1962 The Bay Window. Sam Stewart. January 19:1.

1967 Firms Win Contracts. August 3:9.

1969 Legals and Proposals. May 5:6.

1970 Legals and Proposals. October 12:28.

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USGS (United States Geological Survey, U.S. Department of the Interior)
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1951 Map: Redondo Beach, Calif. (7.5', 1:24,000); aerial photographs taken in 1947, field-checked 1951.
1978 Map: Long Beach, Calif. (120'x60', 1:250,000); 1957 edition revised.
1981a Map: Inglewood, Calif. (7.5', 1:24,000); 1964 edition photorevised in 1978.
1981b Map: Torrance, Calif. (7.5', 1:24,000); 1964 edition photorevised in 1978.
1981c Map: Venice, Calif. (7.5', 1:24,000); 1964 edition photorevised in 1978.
1996 Map: Redondo Beach, Calif. (7.5', 1:24,000); 1963 edition photorevised in 1978, photoinspected in 1996.

APPENDIX 1:
PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR, HISTORY/ARCHITECTURAL HISTORY
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History/Historic Preservation, University of California, Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.
2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1993-2002	Project Historian/Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, University of California, Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, University of California, Riverside.
1988-1993	Research Assistant, American Social History, University of California, Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (with Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

PRINCIPAL INVESTIGATOR, ARCHAEOLOGY
Michael Hogan, Ph.D., RPA (Registered Professional Archaeologist)

Education

1991	Ph.D., Anthropology, University of California, Riverside.
1981	B.S., Anthropology, University of California, Riverside; with honors.
2025	"Introductory Sedimentology for Archaeology," SAA Online Semina by Ervan Garrison.
2021	"An Introduction to Geoarchaeology: How Understanding Basic Soils, Sediments, and Landforms Can Make You a Better Archaeologist," SAA Online Seminar.
2002	"Section 106—National Historic Preservation Act: Federal Law at the Local Level," UCLA Extension Course #888.
2002	"Recognizing Historic Artifacts," workshop by Richard Norwood, Historical Archaeologist.
2002	"Wending Your Way through the Regulatory Maze," symposium by the Association of Environmental Professionals.
1992	"Southern California Ceramics Workshop," presented by Jerry Schaefer.
1992	"Historic Artifact Workshop," presented by Anne Duffield-Stoll.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1999-2002	Project Archaeologist/Field Director, CRM TECH, Riverside, California.
1996-1998	Project Director and Ethnographer, Statistical Research, Inc., Redlands, California.
1992-1998	Assistant Research Anthropologist, University of California, Riverside.
1992-1995	Project Director, Archaeological Research Unit, University of California Riverside.
1991-1992	Crew Chief, Archaeological Research Unit, University of California Riverside.
1984-1998	Project Director, Field Director, Crew Chief, and Archaeological Technician for various southern California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Principal investigator for, author or co-author of, and contributor to numerous cultural resources management study reports since 1986.

Memberships

Society for American Archaeology; Society for California Archaeology; Pacific Coast Archaeological Society.

ARCHITECTURAL HISTORIAN/ARCHITECTURAL HISTORIAN
Terri Jacquemain, M.A.

Education

2004	M.A., Public History and Historic Resource Management, University of California, Riverside.
2002	B.S., Anthropology, University of California, Riverside.
2001	Archaeological Field School, University of California, Riverside.
1991	A.A., Riverside Community College, Norco Campus.

Professional Experience

2003-	Historian/Architectural Historian/Report Writer, CRM TECH, Riverside/Colton, California.
2002-2003	Teaching Assistant, Religious Studies Department, University of California, Riverside.
2002	Interim Public Information Officer, Cabazon Band of Mission Indians.
2000	Administrative Assistant, Native American Student Programs, University of California, Riverside.
1997-2000	Reporter, *Inland Valley Daily Bulletin*, Ontario, California.
1991-1997	Reporter, *The Press-Enterprise*, Riverside, California.

Membership

California Preservation Foundation.

PROJECT ARCHAEOLOGIST
Melissa A. Portilla, B.A.

Education

2023	A.A. (*cum laude*), Anthropology, Fullerton College.
2019	B.A., Ancient History: Classics, University of Hawaii, Manoa.

Professional Experience

2023-	Project Archaeologist, CRM TECH, Colton, California.
2023-2024	Project Archaeologist, Psomas, Pasadena, California.
2020	Collections Assistant, Museum of Us, San Diego, California.

PROJECT ARCHAEOLOGIST/HISTORIAN
Hunter C. O'Donnell, B.A.

Education

2016-	M.A. Program, Applied Archaeology, California State University, San Bernardino.
2015	B.A. (*cum laude*), Anthropology, California State University, San Bernardino.
2012	A.A., Social and Behavioral Sciences, Mt. San Antonio College, Walnut, California.
2011	A.A., Natural Sciences and Mathematics, Mt. San Antonio College, Walnut, California.
2014	Archaeological Field School, Santa Rosa Mountains; supervised by Bill Sapp of the United States Forest Service and Daniel McCarthy of the San Manuel Band of Mission Indians.

Professional Experience

2022-	Field Crew Chief, CRM TECH, Colton, California.
2017-	Project Archaeologist, CRM TECH, Colton, California.
2016-2018	Graduate Research Assistant, Applied Archaeology, California State University, San Bernardino.
2016-2017	Cultural Intern, Cultural Department, Pechanga Band of Luiseño Indians, Temecula, California.
2015	Archaeological Intern, U.S. Bureau of Land Management, Barstow, California.
2015	Peer Research Consultant: African Archaeology, California State University, San Bernardino.

APPENDIX 2

CALIFORNIA HISTORICAL RESOURCES INVENTORY RECORD FORMS AND UPDATE

Mira Costa High School
1401 Artesia Boulevard, Manhattan Beach
(Site 19-187799)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # 19-187799
HRI # _____
Trinomial _____
NRHP Status Code 6Y
Other Listings _____
Review Code _____ Reviewer _____ Date _____

***Page** 1 of 7 ***Resource Name or #:** (Assigned by recorder) Cingular EL0152-2

***P1. Other Identifier:** Mira Costa High School

*P2. Location: ☐ Not for Publication ☒ Unrestricted * a. County: Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Manhattan Beach ***Date:** 1975 **T ; R ; ¼ of ¼ of Sec; B.M.:** SB

c. Address: 7101 S. Peck Avenue City: Manhattan Beach Zip: 90266

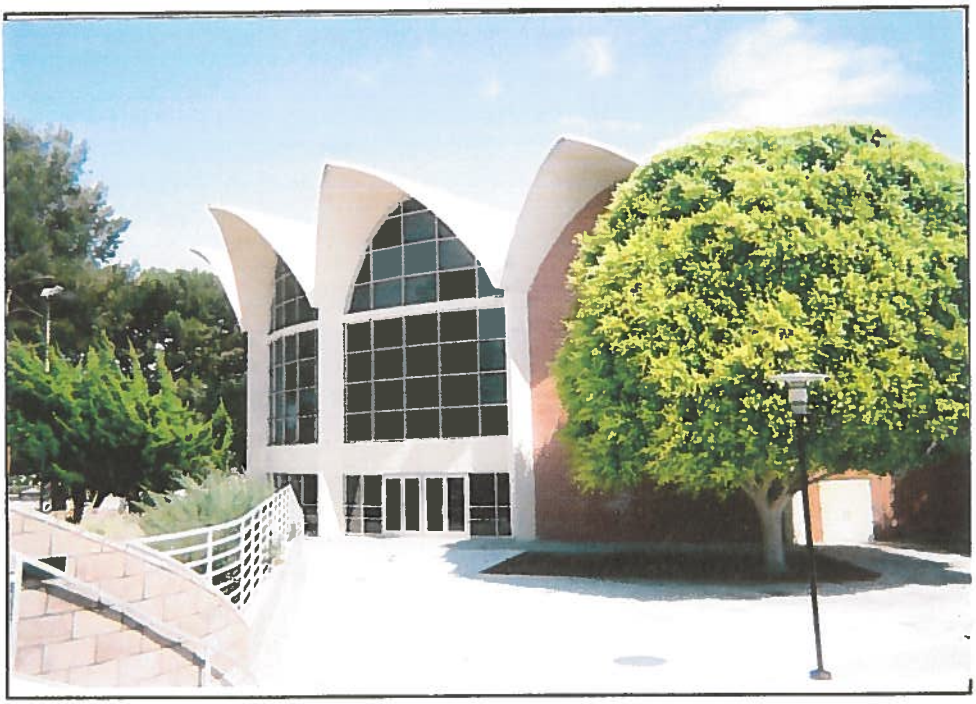
d. UTM: (Give more than one for large or linear resources) Zone; **Me/** **mN**

e. Other Locational Data (e.g., parcel #, directions to resource, elevation, etc., as appropriate):
Assessor's Parcel No. 4168-002-806

***P3a. Description** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):

The resource is a multi-story, egg-shaped, asymmetrical, Modern style, auditorium building. The building has a concrete foundation, brick exterior, and a multi-level roof. The building's main entrance is the dominant feature on the building. The main entrance has soaring arches placed in a row that curves around the north facade of the building. The arches at the entrance area are filled with multilight, metal framed, fixed pane windows that are framed by white concrete beams. The ground level area has several metal and glass sliding doors set across the curve of the entrance area. No windows are present on any other area of the structure. The remaining doors on the structure are single or paired metal utility style doors. White concrete pilasters divided the brick facade exterior into sections, adding minimal detailing to the otherwise plain brick walls. The building is in excellent condition and is surrounded by other buildings in the education complex, a parking lot to the east, and grass lawn and large trees on the west and south sides of the building. The entrance faces into the high school complex, allowing access from other portions of the school.

***P3b. Resource Attributes:** (List attributes and codes) HP-15: Educational Building



P4. Resources Present: Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ **Other** (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) Looking southeast, 07/20/06

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐Both Ca.1960 Los Angeles County Assessor's Office

***P7. Owner and Address:**
Manhattan Unified School District
7101 S. Peck Avenue
Manhattan Beach, CA 90266

***P8. Recorded by** (Name, affiliation, and address): K. Crawford, P.O. Box 3693, La Mesa, CA 91944

***P9. Date Recorded:** 07/20/06

***P10. Type of Survey:** (Describe) Section 106 Compliance Project Review

***P11. Report Citation** (Cite survey report and other sources, or enter "none".) None

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Resource Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

19-187799

State of California — The Resources Agency Primary # _____
DEPARTMENT OF PARKS AND RECREATION HRI# _____
BUILDING, STRUCTURE, AND OBJECT RECORD ***NRHP Status Code** 6Y
***Page** 2 **of** 7 ***Resource Name or #** (Assigned by recorder) Cingular EL0152-2

B1. Historic Name: Mira Costa High School/Auditorium
B2. Common Name: Mira Costa High School/Auditorium
B3. Original Use: Educational **B4. Present Use:** Educational
***B5. Architectural Style:** Modern
***B6. Construction History:** (Construction date, alternations, and date of alterations) The building was constructed in ca. 1960.
***B7. Moved?** ☒No ☐Yes ☐Unknown Date: _____ Original Location: _____
***B8. Related Features:**
B9a. Architect: Moody and Flewelling b. Builder: Davies, Keusder and Brown
***B10. Significance:** Theme: Modern Architecture Area: Manhattan Beach Period of Significance 1960-Present Property Type Educational Applicable Criteria C (Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

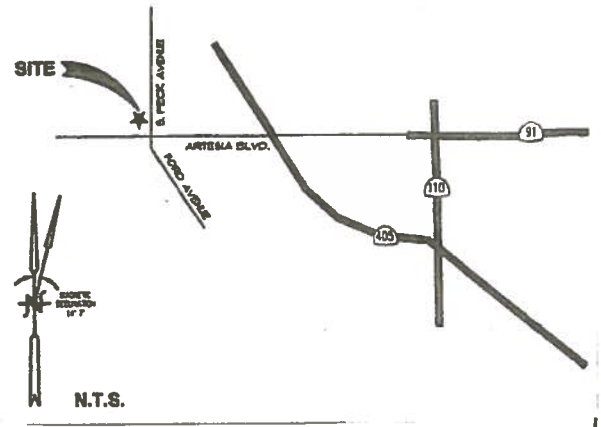
The City of Manhattan Beach is located on land that was originally occupied by Native Americans, and after 1769 by Spanish settlers, Mexican ranchers, and American entrepreneurs. By 1850, California had become a state and Americans began to change the character of California with ranches, orchards, and new cities. The City of Manhattan Beach was originally part of Rancho Sausa Redondo. The rancho land was purchased by George Peck and portions were sold to other owners. One of these owners, Stewart Merrill, in 1901, bought the southern section of the ranch and called the area Manhattan, after his birthplace. Merrill began building structures and the city was incorporated in 1912.After World War II, the city began to expand rapidly with the influx of servicemen and their families. Southern California grew extensively because so many servicemen had passed through the area on their way to the Pacific war theaters and came back to make their homes in the small cities and towns after the war. In the late 1940s, the city of Manhattan Beach recognized the need for a new high school that would accommodate the children of these new residents. A decision was made to start construction of the South Bay Union High School District in 1949. The high school was named the Manhattan-Hermosa High School and the address was first listed as 1401 Gould Avenue. Samuel E. Lunden was chosen as the architect for the first buildings on the campus. Construction began on the campus buildings in 1951. Some of the earliest buildings were the Machine Shop, Science Building, Classrooms, the Gymnasium, and the Music Building. A variety of contractors were used for the different buildings. The decision was made to construct the Auditorium building and it was built in 1960. The architect was the firm of Moody and Flewelling, according to Permit #065260, dated October 28, 1960. The cost of the structure was $748,740. The building is in original condition and does not appear to have alterations.

B11.Additional Resource Attributes: (List attributes and codes) None
***B12. References:** County of Orange Assessor's Office; City of Manhattan Beach Building Permits, Water and Sewer Records; McAlester and McAlester, A Field Guide to American Houses, 1991; City of Manhattan Beach website.
B13. Remarks:
***B14. Evaluators:** Kathleen A. Crawford
***Date of Evaluation:** 07/20/06

(This space reserved for official comments.)

(Sketch Map with north arrow required.)

VICINITY MAP



DPR 523B (1/95)

(continued from page 2)

Integrity Statement

In regard to the seven aspects of integrity of location, design, setting, materials, workmanship, feel and association, the ca. 1960 building on this property has retained its original location. It has not been moved. The building's setting, feel and association have remained intact since its construction. In addition, its original materials, and workmanship have remained intact as the building. The integrity level of the property is good and the condition of the building is excellent.

National Register of Historic Places Eligibility Evaluation

The property was assessed under National Register Criterion A for its potential significance as part of a historic trend that may have made a significant contribution to the broad patterns of our history. The building was constructed as part of the overall educational development of Manhattan Beach during the post-World War II years. It was part of the general expansion of the city as the city needed to provide education for the children of the new residents. There is no significant historic trend or event that is associated with this property. **Therefore, the property does not appear to qualify for the National Register of Historic Places (NHRP) under Criterion A.**

The property was considered under Criterion B for its association with the lives of persons significant in our past. There is no evidence to suggest that any of the persons associated with the construction or development of the property were considered important in the history of this property. None of the persons associated with this building appear to have made any significant contributions to the development of the area and do not appear to be historically significant in any way. **Therefore, the property does not appear to qualify for the National Register of Historic Places (NHRP) under Criterion B.**

The property was evaluated for Criterion C for embodying the distinctive characteristics of a type, period, or method of Modern construction, or representing the work of a master, or possessing high artistic values, or representing a significant and distinguishable entity whose components lack individual distinction. The building was constructed to provide high school space in Manhattan Beach in the mid-twentieth century. The building was designed in a basic Modern style. The building does not represent a significant and distinguishable entity whose components may lack individual distinction. The building serves as an example of the Modern style which was used extensively in Los Angeles for structures in the 1960s. The building does not include distinctive elements of this style and its design does not rise to a level of architectural significance. The building does not serve as a significant example of the style to qualify for National Register status. The building does not include significant artistic values and does not represent the work of a master architect or craftsman. None of the people connected with the design and construction were considered to be master architects or craftsman. The building retains its basic integrity in terms of mass and form. **Therefore, the property does not appear to qualify for the National Register of Historic Places (NHRP) under Criterion C.**

The property was considered for Criterion D for the potential to yield, or may be likely to yield, information important to prehistory or history. In order for buildings, structures and objects to be eligible under this criterion, they would need to "be, or must have been, the principal source of information." This is not the case with this property. **Therefore, the property does not appear to qualify for the National Register of Historic Places (NHRP) under Criterion D.**

In summary, the property does not appear to qualify for the NHRP under Criterion C. Therefore, the building is not a historic resource for the purposes of NHPA. The property was not assessed for California Register or local designation eligibility.

Mira Costa High School
View Southwest/North Facade
July 20, 2006



Mira Costa High School
View West/East Facade
July 20, 2006



Mira Costa High School
View West/East Facade
July 20, 2006



Mira Costa High School
View East/North Facade
July 20, 2006



Mira Costa High School
View Southeast/North and West Facades
July 20, 2006



Mira Costa High School
View North/West and South Facades
July 20, 2006



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

CONTINUATION SHEET

19-187799

Primary # _____
HRI # _____
Trinomial _____

Page 7 of 7 *Resource Name or # (Assigned by recorder) Cingular EL0152-2

*Recorded by K.A. Crawford/Crawford Historic Services Date 07/20/06 ☒ Continuation ☐ Update

Mira Costa High School
View North/South and East Facades
July 20, 2006



State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # 19-187799 (Update)
HRI #
Trinomial
NRHP Status Code
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 4287-01H

P1. **Other Identifier:** Mira Costa High School

***P2.** **Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** Los Angeles
and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

*b. **USGS 7.5' Quad** Redondo Beach and Venice **Date** 1981/1996
T3S; **R**14W; S.B. **B.M.** (within the Rancho Sausal Redondo land grant)

c. **Address** 1401 Artesia Boulevard **City** Manhattan Beach **Zip** 90266

d. **UTM:** (Give more than one for large and/or linear resources) **Zone** 11 ; 371,487 **mE**/ 3,749,134 **mN**
UTM Derivation: ☐ USGS Quad ☐ GIS ☒ Google Earth

e. **Other Locational Data:** (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
AIN 4168-002-906; on the north side of Artesia Boulevard (State Route 91) between Meadows Avenue and Peck Avenue

***P3a** **Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The Mira Costa High School campus consists of 24 permanent buildings, a football stadium with bleachers, three baseball/softball fields, a multisport athletic field, a pool, ten tennis courts, three parking lots, and a quad. These buildings and features are discussed below in groups according to their phases of construction. Phase I represents the initial construction in 1949-1953, Phase II is the first expansion in 1953-1956, Phase III is an expansion of amenities and existing features in 1960-1970, and Phase IV is the most recent upgrading focused on replacing aged buildings and amenities in 2000-2020. As many of the buildings have letters assigned to them, they will be primarily referred to by that naming convention.

Buildings and features from Phase I (1949-1953) include Building H, as the "Finger Buildings" (Buildings M, N, P, and Q), Building R, Building S, Building W, Building X, Building L, the football field and accompanying snack

(*Continued on p. 5*)

***P3b.** **Resource Attributes:** (List attributes and codes) HP15: Educational building (High School)

***P4.** **Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (isolates, etc.)

P5a. **Photograph or Drawing** (Photograph required for buildings, structures, and objects.)



P5b. **Description of Photo** (view, date, accession number): Google Street View, June 2024; view to north (see also pp. 10-15)

***P6.** **Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
Opened in 1950

***P7.** **Owner and Address:** Manhattan Beach Unified School District, 325 S. Peck Avenue, Manhattan Beach, CA 90266

***P8.** **Recorded by** (Name, affiliation, & address): Hunter O' Donnell and Melissa Portilla, CRM TECH, 1016 East Cooley Drive, Suite A/B, Colton, CA 92324

***P9.** **Date Recorded:** July 17, 2025

***P10.** **Survey Type** (describe): Historic building evaluation for CEQA compliance

***P11.** **Report Citation:** (Cite survey report and other sources, or enter "none.") Terri Jacquemain, Hunter O'Donnell, and Melissa Portillo (2025): Historic Building Evaluation, Mira Costa High School. 1401 Artesia Boulevard, City of Manhattan Beach, Los Angeles County, California

***Attachments:** ☐None ☒Location Map ☒Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Resource Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z

*Resource Name or # (Assigned by recorder) CRM TECH 4287-01H

B1. Historic Name: Mira Costa High School
B2. Common Name: Mira Costa High School
B3. Original Use: Education
B4. Present Use: Education
*B5. Architectural Style: Modern
*B6. Construction History: (Construction date, alterations, and date of alterations) The district acquired the land for Mira Costa High School in 1947 from Francis Miyosaku Uyematsu. Uyematsu had operated Star Nursery on the property since 1940, specializing in camellias and Japanese cherry trees, but between 1942 and 1945 he and his family were relocated and interned at Pomona Assembly Center and Manzanar War Relocation Center. Plans for Mira Costa High School were revealed in November 1948 with the "finger buildings" at the core of the school, so-named for their long rectangular footprint and arrangement toward the middle of campus. (*Continued on p. 7*)
*B7. Moved? √ No ___ Yes ___ Unknown Date: ___ Original Location:
*B8. Related Features: See Item P3a om p. 1.
B9a. Architect: Samuel E. Lunden
b. Builder: Curlett Construction Company
*B10. Significance: Theme Post-World War II urban/suburban expansion
Area Manhattan Beach
Period of Significance 1950-1970
Property Type High school
Applicable Criteria N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) Mira Costa High School was built to serve a rapidly growing suburban population in Manhattan Beach during the post-World War II boom. As such, its origin and early history are directly associated with the phenomenal urban/suburban expansion at the time, an event—or pattern of events—that left a lasting impact on the history of the U.S. and particularly southern California. As one of numerous public education institutes in the region of similar vintage, however, it does not demonstrate a unique or particularly close association with that event or historic theme. The school's history reflects typical educational activities and community involvement, such as student organizations and extracurricular programs, but these are not unique or exceptional in the context of California's educational system. No specific events of distinctive significance, such as nationally recognized achievements or groundbreaking educational reforms, have been identified in association with the school that would elevate its historical importance. Therefore, Mira Costa High School does not appear to meet NRHP Criterion A or CRHR Criterion 1.

Similarly, historical background research has not identified any persons of recognized significance in national, state, regional, or local history in close association with Mira Costa High School. While a number of the buildings and other facilities are named after administrators, teachers and, in the case of the main baseball field, a former student in the local school system, there is no evidence that any of them attained the level of historic significance required by the California Register. Most of the buildings, in fact, were named after individuals who were not directly associated with Mira Costa High School, purely for commemorative purposes. Therefore, Mira Costa High School does not appear to meet NRHP Criterion B or CRHR Criterion 2. (*Continued on p. 8*).

B11. Additional Resource Attributes: (List attributes and codes)
B12. References: See p. 8.
B13. Remarks:
*B14. Evaluator: Terri Jacquemain, M.A.
*Date of Evaluation: September 2025

(Sketch Map with north arrow required.)

(See p. 4)

(This space reserved for official comments.)

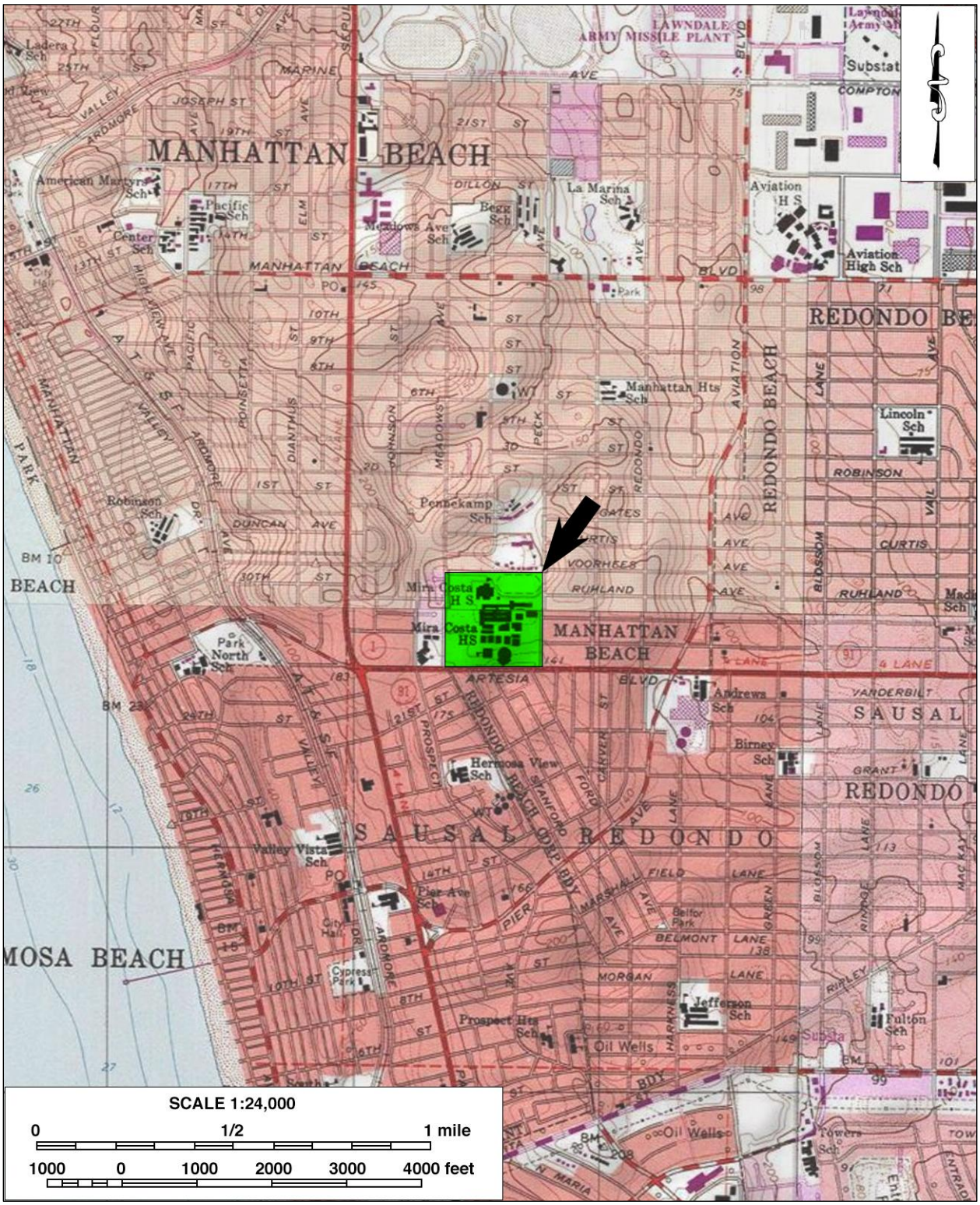
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 19-187799 (Update)
HRI #
Trinomial

Page 3 of 15 *Resource Name or # (Assigned by recorder) CRM TECH 4287-01H

*Map Name: Inglewood, Redondo Beach, Torrance, and Venice, Calif.
*Scale: 1:24,000 *Date of Maps: 1981-1996



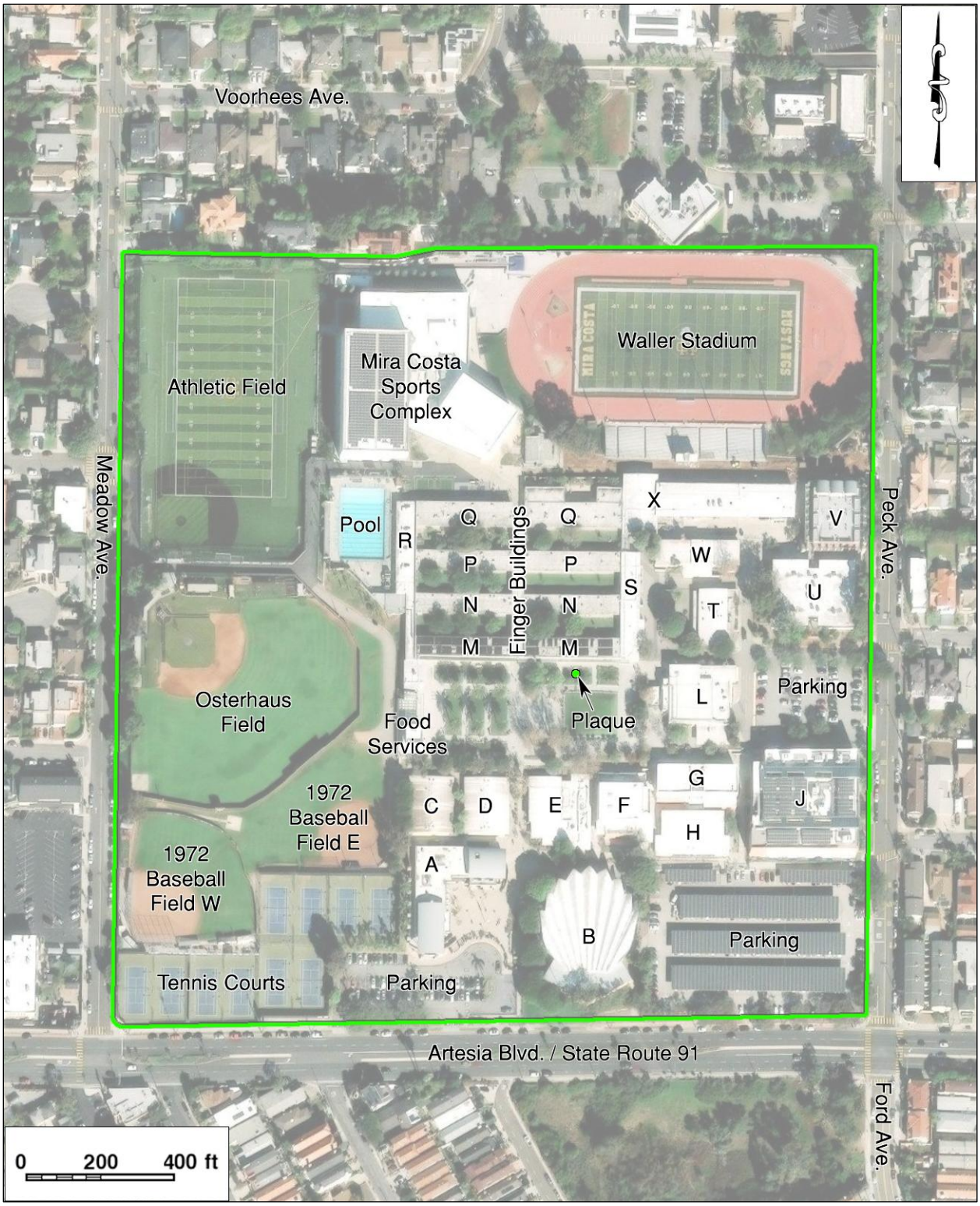
DPR 523J (Rev. 1/1995) * Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary # 19-187799 (Update)
HRI #
Trinomial

***Resource Name or #** (Assigned by recorder) CRM TECH 4287-01H

Drawn by: Melissa Portilla **Date:** August 15, 2025



Recorded by: Hunter O'Donnell and Melissa Portilla
***Date:** July 17, 2025 √ Continuation √ Update

***P3a Description (continued):** stand, and the main baseball field. Many of these were not fully completed when class began at Mira Costa High School in 1950, with construction work continuing into 1953.

Building H is a rectangular building with a side gable roof on the northern section and a flat roof on the southern section, covered in grey BDU and ending in wide closed eaves. The walls are clad in tan stucco with green trim. Steel framed, partially fenestrated steel doors at the east and west ends under covered stoops. Building H is the Band Hall.

Buildings M, N, P, and Q are a series of eight rectangular classroom buildings connected by a covered walkways and framed on the east and west side by Buildings R, S, and X, also rectangular in shape. The roofs are all flat with slight inclines, covered in grey BDU, and ending in extensions for the covered walkways and no eaves elsewhere. Exterior walls are clad in stucco and painted tan or peach with trim painted green. Extensive banks of fixed windows run the lengths of each building providing light to classrooms and locker-lined hallways. Building R runs north-south along the west side of the conglomerate while Building S runs north-south along the southeast and Building X along the northeast. Buildings R and S are similar in design and layout however Building X was expanded upon with a rectangular section running north-south and a rectangular section running east-west. Two small additions come south off of the east-west section of Building X near rolling garage doors with one of them constructed with cinderblock and the other clad in stucco.

Building W has a rectangular floor plan with a side-gable roof featuring a slight elevation peak. The roof is covered in grey BDU and ends in no eaves. The walls are clad in stucco and painted tan with the trim painted dark green. Large banks of fixed windows line every side of the building with entry provided by steel-framed steel doors.

Building L (the cafeteria) is a largely rectangular building with a split-level flat roof covered in grey BDU and ending in no eaves. Walls are clad in stucco and painted tan with trim painted dark green. Fenestration includes large banks of fixed windows on each side of the building. Casement windows are present along the western protrusion of the building which features a steel doorway covering. The eastern side of the building features a bank of fixed windows covered with aluminum window awnings. An addition was constructed off of the south side of the building, now known as the "Snack Shack" was built in 1952-1953.

The recreational fields began their development during Phase I with the oval of the football field and track and the diamond of the baseball field delineated by 1952 and a rectangular brick snack stand built off of the southwest corner of the football field and track.

Buildings and features from Phase II (1953-1956) include Buildings C, D, E, and T. Building C is a rectangular classroom building with a side-gabled roof, covered in grey BDU, and ending in no eaves at the north and south ends and very wide closed eaves on the east and west sides covering walkways and classroom entrances. The walls are brick, painted tan, with the trim printed green. Doors are steel and steel-framed. Fenestration consists at least partially of steel-framed four-pane pivot windows, and some may have fixed sashes.

Building D is essentially identical to Building C: a rectangular classroom building with a side-gabled roof, covered in grey BDU, and ending in no eaves at the north and south ends and very wide closed eaves on the east and west side covering walkways and classroom entrances. The walls are tan brick, painted

Recorded by: Hunter O'Donnell and Melissa Portilla
***Date:** July 17, 2025 √ Continuation √ Update

***P3a Description (continued):** with green trim. Doors are steel and steel-framed. Fenestration is at least partially steel-framed four-pane pivot windows, though some may be fixed.

Building E (the library) has an irregular floorplan partially topped with a flat roof and a low-pitched side gabled roof, both covered in grey BDU, and ending in wide, closed eaves along the sides with walkways. The foundation is poured and pressed concrete. The walls are brick painted tan and grey. Doors are steel-framed and steel while fenestration is a combination of steel-framed fixed and steel-framed pivot windows.

Building T has an irregular floorplan with two protrusions extending from the north and south end of the eastern side. The roof is side-gabled with a low-elevation peak, covered in grey BDU, with flat roofs atop the eastern protrusions. The roofs end in wide closed eaves with the western over a covered walkway and aluminum window hang from the pent roof over the walkways. The walls are brick, painted tan, with the trim painted light green and dark green. Doors are still-framed steel doors, two of which are fenestrated with a single pane for observation. Fenestration is a combination of fixed and pivot steel-framed windows. A series of four brick and concrete benches line the western wall between the classroom entrances. A school district representative stated this had formerly been the photography lab with a dark room.

Buildings and features from Phase III (1960-1970) include Building B, Building U, the announcer's booth at the football field, the restrooms at the main baseball field, and the announcer's booth at the southwest baseball field. The two southern baseball fields and all of the tennis courts were moved into their current locations in the early part of Phase III with Building U being built in the footprint of the old tennis courts.

Building B is the auditorium building described in detail in the 2006 record forms for Site 19-187799. In short, it is a multi-story, egg-shaped, asymmetrical, Modern-style auditorium building. Per a school district administrator, the lobby has recently been remodeled and the gutter system has also been installed to re-route runoff.

Building U has a roughly square-shaped two-story floorplan with wide notches in the north and south sides and a flat roof covered in grey BDU. The building has wraparound promenades on either floor with the upper floor walkway bounded by a low stucco-covered wall and steel railing. The walls are brick with the trim and walkway walls/poles painted tan. Doors are steel and fenestration includes aluminum horizontal sliding windows. Lockers line the lower floor.

The announcer's booth at the football field has a rectangular floorplan with a flat roof covered in grey BDU. The walls are brick, painted green with the trim painted yellow. Doors are steel-framed and steel. A grey-painted observation platform with wooden railing has been constructed on the roof. The restrooms at the main baseball field (Osterhaus Memorial Field) has a rectangular floorplan and a flat roof covered in grey BDU. The walls are cinder block, painted dark green, with the trim painted yellow. Doors are steel-framed and steel.

Buildings and features from Phase IV (2000-2020) include Building A, Building F, Building G, Building L, Building V, the Mira Costa Sports Complex, Food Services, and the quad. The modern buildings are a combination of brick and stucco painted in bold coloring, brick in a dual color patterning, or just stucco painted in bold coloring with nearly all of the modern buildings being two story. The quad was built where several buildings from Phase I and II of MCHS once stood.

Recorded by: Hunter O'Donnell and Melissa Portilla
***Date:** July 17, 2025 √ Continuation √ Update

***B6. Construction History (continued):** Over 70,000 cubic yards of dirt would be moved for the construction project beginning just prior to 1949. Plans included 22 classrooms, boys' and girls' locker rooms, shop building, combination study hall, library, an assembly, and part of the administrative unit which could support 600-700 students with the ultimate enrollment expected to reach 2,000-2,500 students. The architect was Samuel E. Lunden and the $646,084 construction contract was awarded to the Curlett Construction Co. Groundbreaking was on May 24, 1949, and by July enough classroom were completed to allow summer school art classes. By September 7, 1950 the campus consisted of "…an assembly-library-study hall building, 20 classrooms, an administrative building, health unit, shop building, office and dressing rooms for physical education class…two grass playfields, one for boys and one for girls…eight paved tennis courts,10 volleyball courts, and nine basketball courts…" with future plans for "…14 more classrooms, two shop buildings, an auditorium-gymnasium, and a cafeteria."

Construction of the first phase of buildings continued until 1953 with Building H, two additional wings on the "finger buildings", an addition off the south side of the cafeteria, a football field in the northeast corner of the property and a baseball field near the center of the western boundary of the property ending Phase I of construction on the campus. Phase II (1953-1956) brought Buildings C, D, E (Library), and T, in addition to the improvements on the football field. In 1954 bids were accepted for library and shop buildings. The architect was Ralph Flewelling and while the Robert F. Muller & Company built the music building with 11 classrooms at a cost of approximately $130,000. Unspecified additions to the high school were bid on in 1955 with bids for the football stadium, including a press box and seating for 5,000.

Phase III (1960-1970) included many recreation areas, general amenities, and accommodations for an increased student population. The phase started in 1960 with the clamshell auditorium. Grading for the auditorium, with an estimated cost over three-quarter million dollars and designed by architects Flewelling and Moody, began towards the end of 1960 with construction continuing into 1962 with a two-story building along the eastern edge of campus, the football stadium press box, restrooms for the baseball field, the establishment of the two southern baseball fields and baseball press box, and the relocation of the tennis courts to the southwest corner of campus where they continue to be utilized today.. In 1967 Hendrickson and Knox out of Palos Verdes won the contract to construct 12 additional classrooms while Earl Mason, A.I.A., of Redondo Beach was awarded the contract for additions to the counseling offices, industrial arts building, and library for $208,000. In 1969 Lauren Construction Co. was awarded a contract for an addition to the Auto Shop and library and to remodel the coaches' offices, locker rooms, and gyms for $146,000 while Fred A. Walsh, Inc. was awarded a contract for a Home Economics building and a large group instruction classroom building for $478,000 with completion expected by 1970. Bids for athletic field improvements were called for in 1969 and for the construction of the two-story building along the eastern edge of campus in 1970.

Phase IV, the most recent phase of construction on the campus, took place between 2000 and 2020 and has largely been an effort to replace outdated buildings with modern buildings with sleek designs and prominent exteriors. The buildings within the phase and their construction dates include: Building A (Student Services), 2003-2004; Building F (Small Theater), 2014-2016; Building G, 2014-2016; Building L (Math/Science), 2012-2014; Building V, 2000-2003; the Mira Costa Sports Complex, 2018-2020; the Food Services "Beach Café," 2012-2014; and the quad, 2014-2016.

Recorded by: Hunter O'Donnell and Melissa Portilla
***Date:** July 17, 2025 √ Continuation √ Update

***B10. Significance (continued):** The architecture of the 1950-1970 campus reflects mid-20th century Modernist influences, a style ubiquitous in California—and indeed throughout the U.S. and the world—during the post-war decades. The portions of the campus from that period feature functional, mostly single-story buildings with minimal ornamentation, typical both of the style and of the emphasis on cost-effective, standardized school construction to accommodate rapid population growth. However, the school and its buildings do not stand out as an important example of the Mid-Century Modernist movement in architecture, nor do they exhibit a particularly high level of artistic value or any other distinctive merits to distinguish it from the numerous similar school campuses of similar age in southern California.

The architect associated with the original buildings on campus, Samuel E. Lunden, was nationally known and for his outstanding achievements in architecture, including several well-known works that are now listed in the National Register of Historic Places. While Lunden undoubtedly qualifies as a master architect, Mira Costa High School, with its relatively common design for post-World War II educational institutes and other office buildings, is not known to be an important, exemplary, or especially innovative example of his work in comparison to the better recognized edifices elsewhere in southern California. For these reasons, Mira Costa High School does not appear to meet NRHP Criterion C or CRHR Criterion 3.

Lastly, as a common late-historic-period to modern-era facility, Mira Costa High School is unlikely to yield information important to the study of educational or local history, for which published materials, contemporary sources, and archival records are readily available, or to contribute otherwise to historical or architectural research. Consequently, it does not appear to meet NRHP Criterion D or CRHR Criterion 4. Based on these considerations, Mira Costa High School does not appear eligible for listing in the National Register of Historic Places or the California Register of Historical Resources.

B12. References:

Daily Breeze, *The* (Hermosa Beach, California)
1948 New South Bay High School. November 15:1.
1949a "Mira Costa" Name of New High School. January 19:1.
1949b State Allocates Funds for Mira Costa High School. March 10:1.
1949c Award High School Contract. May 18:1.
1949d Ground Broken at Mira Costa High Site. May 24:1.
1949e School Renders Progress Report. July 6:1.
1950a Everything New at Manhattan School Site. September 1:3.
1950b Skipper Waller Crawls Aboard Commissioned Manhattan Ship. September 1:16.
1950c First Students Enter Mira Costa High. September 12:20.
1954a Bids on Two High School Projects under Estimates. August 21:1.
1954b New Mira Costa Music Building Ready Next Fall. February 25:5.
1955 Legals and Proposals. May 21:7.
1956 Mira Costa Work Ups Valuations. May 26:12.
1961 Unique Design. January 5:17.
1962 The Bay Window. Sam Stewart. January 19:1.
1967 Firms Win Contracts. August 3:9.
1969 Legals and Proposals. May 5:6.
1970 Legals and Proposals. October 12:28.

Recorded by: Hunter O'Donnell and Melissa Portilla
***Date:** July 17, 2025 √ Continuation √ Update

Gnerre, Sam
2025 Mira Costa High School Was Built on Francis Uyeamtsu's Last 40 Acres of Land. South Bay History blog, July 4. https://sbhistoryblog.wordpress.com/2025/07/04/mira-costa-high-school-was-built-on-francis-uyematsus-last-40-acres-of-land/.

Hermosa Beach Review, The
1940 Nursery May Take Over Famous Ranch Acreage. June 13:1.
1969 New Buildings Set for All Local High Schools. January 16:1.

Los Angeles Times, The
1960 The Week in Review. November 6. L2.
2006 Roots That Run Deep. April 30. 22.

NETR (Nationwide Environmental Title Research) Online
1952-2022 Aerial/satellite photographs of the project vicinity; taken in 1952, 1953, 1963, 1972, 1980, 2000, 2003, 2004, 2012, 2014, 2016, 2018, 2020, and 2022. https://historicaerials.com/.

Oliver, Myrna
1995 Samuel E. Lunden, Veteran L.A. Architect. *Los Angeles Times* June 16.

Redondo Reflex, The
1940 Star Nursery Company Buys Ranch Acreage. June 21:1.

Southwest Wave, The
1942 Star Nursery Offering Rare Easter Lilies. April 3:26.

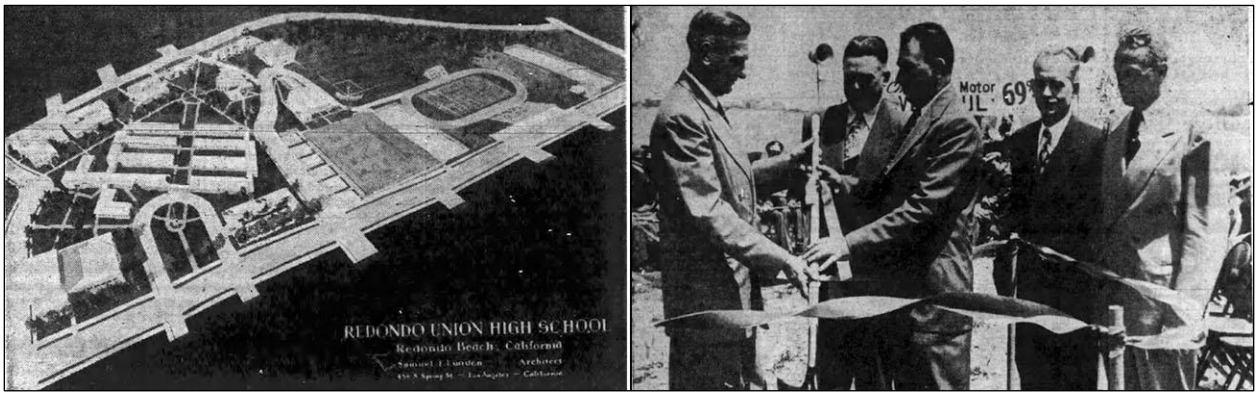
Tidings, The
1909 Figueroa Street Nursery. December 10:108.

Recorded by: Hunter O'Donnell and Melissa Portilla
***Date:** July 17, 2025 √ Continuation √ Update

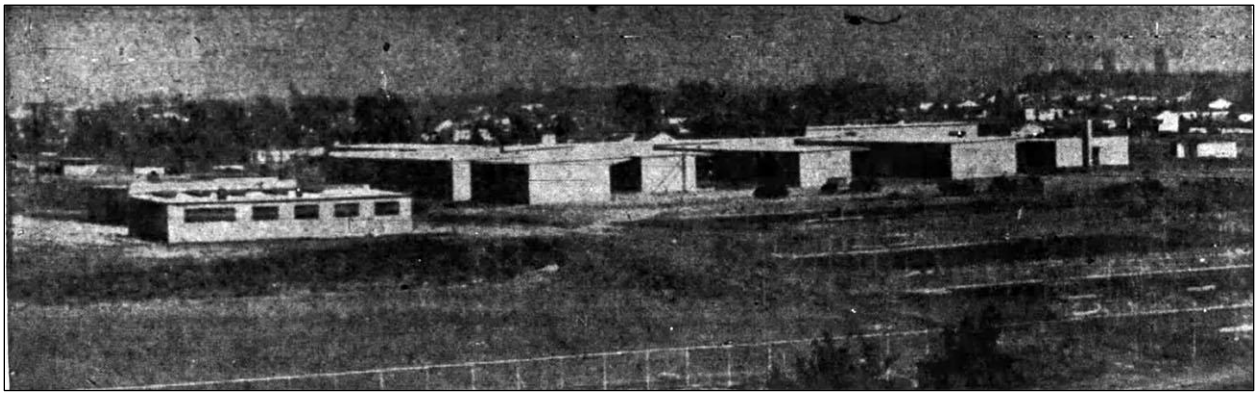
Additional Photographs:



Left: Francis Miyosaku Uyematsu's Manhattan Beach estate in 1941, now location of Mira Costa High School; *right*: "Camellia King" commemorative plaque for Uyematsu on campus



Building planning. *Left*: pre-construction plans prior to Mira Costa naming, note the "Finger Buildings" with courtyards (source: *The Daily Breeze*, November 15, 1948); *right*: groundbreaking ceremony (source: *The Daily Breeze*, May 28, 1949)



Mira Costa High School in September 1950. Incomplete finger buildings on right side

Recorded by: Hunter O'Donnell and Melissa Portilla
***Date:** July 17, 2025 √ Continuation √ Update

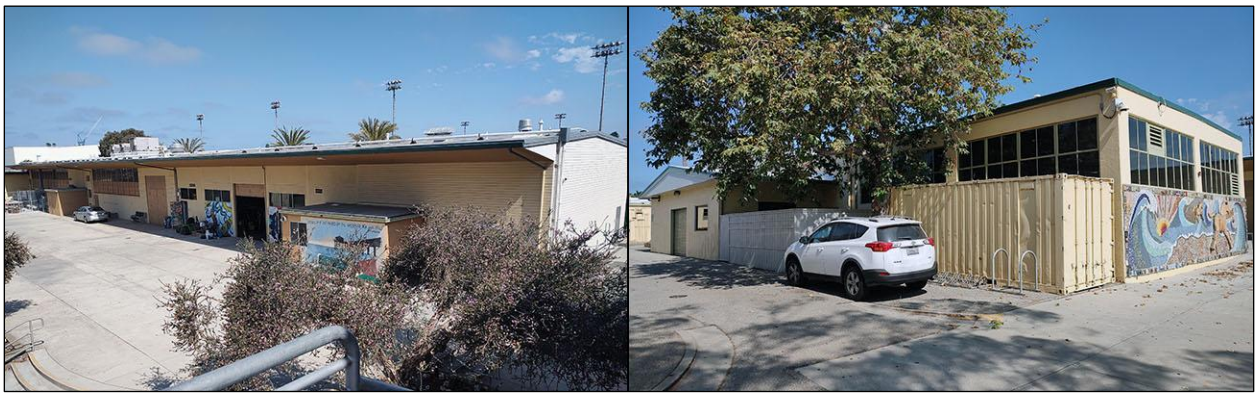
Additional Photographs:



Phase 1 buildings (1949-1953). *Left*: courtyard at the "Finger Buildings," Buildings M, N, P, and Q, view to the east; *right*: cafeteria, view to the southwest



Phase 1 buildings (1949-1953). *Left*: Building H, view to the northwest; *right*: Building S, view to the southwest



Phase I buildings. *Left*: Building X, view to the northwest; *right*: Building W, view to the northwest

Recorded by: Hunter O'Donnell and Melissa Portilla
***Date:** July 17, 2025 √ Continuation √ Update

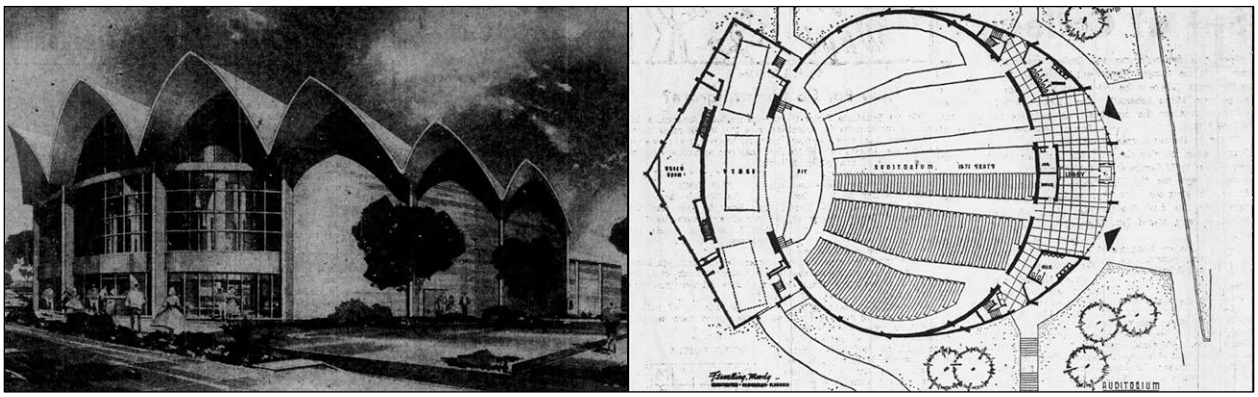
Additional Photographs:



Phase II buildings (1953-1956). *Left*: Building C, view to the southwest; *right*: Building D, view to the south



Phase II buildings. *Left*: Building E, the library, view to the north; *right*: Building T, view to the east



Phase III planning. *Left*: sketch of auditorium (source: *The Daily Breeze*, January 5, 1961); *right*: auditorium interior plans (source: *The Daily Breeze*, January 11, 1962)

Recorded by: Hunter O'Donnell and Melissa Portilla
***Date:** July 17, 2025 √ Continuation √ Update

Additional Photographs:



Phase III building and feature (1960-1970). *Left*: Building U, view to the east; *right*: Mustang Mall quad, view to the east



Building B (Auditorium; Phase III). *Left*: main entrance, view to the southwest; *right*: ridges on "dorsal" end of clamshell, view to the north



Modern buildings (Phase IV, 2000-2020). *Left*: Building A, Student Services, view to the west; *right*: Building V, view to the northeast

Recorded by: Hunter O'Donnell and Melissa Portilla
***Date:** July 17, 2025 √ Continuation √ Update

Additional Photographs:



Modern buildings. *Left*: Building F, Small Theater, view to the north; *right*: Building L, Math/Science, view to the south



Modern buildings. *Left*: Mira Costa Sports Complex, view to the northeast; *right*: Building G, view to the southwest



Modern buildings. *Left*: Beach Café food services, view to the north; *right*: Mustang Stage, view to the west

Recorded by: Hunter O'Donnell and Melissa Portilla
***Date:** July 17, 2025 √ Continuation √ Update

Additional Photographs:



Phase 1 feature: Carl Osterhaus Memorial Field (1949-1950). *Left*: across diamond, view to the southeast; *right*: Carl Osterhaus memorial plaque



1970 baseball fields. *Left*: across eastern field, view to the south; *right*: fieldhouse for western field (1971-1972), view to the west



Updated features. *Left*: Waller Stadium, field created in 1950, view to the northwest; *right*: across tennis courts, established at current location 1968-1970 and 1970-1972, view to the east

APPENDIX F:
PALEONTOLOGICAL RESOURCES REPORT



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Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007
tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

August 16, 2025

Placeworks
Attn: Jennifer Kelley

re: Paleontological resources records search for the Mira Costa High School Field Renovation, Lighting Improvement, and Campus Master Plan Project (MBUS-040)

Dear Jennifer:

I have conducted a search of our paleontology collection records for the proposed development at the Mira Costa High School Field Renovation, Lighting Improvement, and Campus Master Plan Project area as outlined on the portion of the Venice USGS topographic quadrangle map that you sent to me via e-mail on August 12, 2025. We do not have fossil localities that have been recorded or georeferenced directly within the proposed project area, but we do have fossil localities nearby from similar sedimentary deposits that may occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County (NHMLA).

Locality Number	Location	Formation	Taxa	Depth
LACM IP 5096	4848 W. 190th Street, Torrance	Timms Point Silt	Invertebrates: lobster/crab family (Decapoda), Washington clams (*Saxidomus*), gastropods (*Kurtizella, Ithycythara*), barnacle (*Megabalanus*), limpet (*Fissurelidea, Lottia*), top snails (*Calliostoma*), lucinids (*Lucinisca*), wentletrap (*Epitonium*), pyramidellid snails (*Odostomia*), dwarf olive (*Callianax*), slipper snail (*Crepidula*), cerith (*Lirobittium*), bubble snail (*Acteocina*), tusk shell (*Dentalium*), moon snail (*Glossaulax*), pyrams (*Turbonilla*), scallop (*Leptopecten*), cone snails (*Californiconus*), falsejingle (*Pododesmus*)	Unknown
LACM IP 14	Redondo	Quaternary terrace deposits	Invertebrates: ship worms (Teredinidae), sand dollar (*Dendraster)*, moon snails (Naticidae), horn snails (*Bittium),* bubble snails (*Acteocina),* true welks (*Neptunea),* cone snail (*Crockerella, Conus),* worm shells *(Serpulorbis),* turrid (*Antiplanes),* murex snails (*Boreotrophon),* tower shell (*Turritella*), oyster (*Ostrea),* venus clams (*Petricola, Chione, Amiantis, Tivela),* dimplodon	Unknown

Locality Number	Location	Formation	Taxa	Depth
			(*Diplodonta),* cardita (*Cyclocardia),* scallop (*Chlamys*)*, bean clam* (*Donax),* dwarf olive (*Callianax*)*,* Washington clams (*Saxidomus*),yellow cockle (*Dallocardia),* paddock (*Penitella*)	
LACM VP 4942, 3264	Los Angeles International Airport	Unknown formation (Pleistocene sands)	Elephant clade (Proboscidea), mammoth (*Mammuthus*); bison (*Bison*); hare (*Lepus*)	15 - 25 feet bgs
LACM VP 1295*, 1344, 4206	Harbor Freeway excavations between 112 St & 113 St.	Unknown formation (Pleistocene)	Horse (*Equus*), bison (*Bison*), canine (*Canis*), birds (*Mancalla, Parapavo*, Aves), rabbit (*Sylvilagus,* Leporidae), mammoth (*Mammuthus*), rodent (*Thomomys, Microtus,* Sciuridae, Rodentia), ground sloth (*Paramylodon*), antelope (*Breameryx*), artiodactyl (*Pecora*), turtle (*Clemmys*)	Unknown
LACM VP 6630	Cliffs above Torrance Beach	Found in Pleistocene deposits and presumably reworked from the Monterey Formation (Altamira Shale)	Whale (Cetacea)	Exposed about half-way up the sea cliff

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface
** Miller 1971; Bulletin of the Los Angeles County Museum of Natural History, science: no. 10.*

This records search is limited to the records of the NHMLA. It is not intended as a paleontological assessment of the project for the purposes of California Environmental Quality Act (CEQA) or National Environmental Policy Act (NEPA). Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a paleontological assessment be conducted by a paleontologist meeting Federal (43 Code of Federal Regulations Part 49.110) or Society of Vertebrate Paleontology standards for compliance with applicable regulations, such as CEQA or NEPA.

Sincerely,



Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

APPENDIX G:
SOIL SUMMARY



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MEMO

TO: Jennifer Kelley, PlaceWorks

FROM: Hannah Boelts, HANA Resources, Inc.

DATE: October 30, 2025

SUBJECT: Mira Costa High School – Summary of Soils

PURPOSE

This memorandum provides a summary of HANA's findings from the desktop review of the soils present at the Project site.

PROJECT SITE SOIL DESCRIPTION

HANA Resources, Inc. (HANA) conducted a desktop review of the soils present at the Project site.

There is one soil type, 1152 – Urban land – Abaft – Marina complex, presently mapped on the Project site. The map unit composition consists of 50% urban land, 25% abaft and similar soils, 15% marina and similar soils, and 10% minor components. The mean annual precipitation is 13 to 14 inches and the mean annual air temperature is 62 to 64 degrees F. Information regarding the soil type is provided on the table below.

Map Unit Composition	Upper Boundary	Lower Boundary	Description
Urban Land	---	---	0-15% slopes, 0 inches to manufactured layer, and very high runoff class
Abaft	0 inches	79 inches	Sand, parent material: discontinuous human-transported material over eolian sands, 0-15% slopes, more than 80 inches to restrictive feature, somewhat excessively drained, and negligible runoff class
Marina	0 inches	79 inches	Sandy loam/sand/loamy sand, parent material: discontinuous human-transported material over eolian sands, 0-15% slopes, more than 80 inches to restrictive feature, somewhat excessively drained, and very low runoff
Minor Components	---	---	Abaft loamy surface: 5% of map unit, no hydric soil rating, side slope/base slope Garey: 5% of map unit, no hydric soil rating, side slope/crest

Source: USDA NRCS Web Soil Survey

CERTIFICATION STATEMENT

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this memo, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

October 30, 2025

Date



Hannah Boelts, M.S., QSP
Environmental Geologist

October 30, 2025

Date



R. Austin Isakson
Associate Biologist/GIS Analyst

HANA RESOURCES, INC.
20361 Hermana Circle
Lake Forest, CA 92630
949.648.4988

APPENDIX H:
NOISE ANALYSIS



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NOISE MONITORING DATA

Measurement Report

Report Summary

Meter's File Name	LxT_Data.071.s	Computer's File Name	LxT_0005424-20250612 172948-LxT_Data.071.ldbin
Meter	LxT1 0005424	Firmware	2.404
User	AC	Location	ST-1
Job Description	MBUS-4.0		
Note			

Start Time	2025-06-12 17:29:48	Duration	0:15:00.0		
End Time	2025-06-12 17:44:48	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2025-06-12 16:13:41	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	63.8 dB		
LAE	93.3 dB	SEA	--- dB
EA	239.9 µPa²h		
EA8	7.7 mPa²h		
EA40	38.4 mPa²h		
LAS_{peak}	104.0 dB	2025-06-12 17:38:38	
LAS_{max}	80.8 dB	2025-06-12 17:32:34	
LAS_{min}	48.7 dB	2025-06-12 17:35:06	
LA_{eq}	63.8 dB		
LC_{eq}	74.1 dB	LC_{eq} - LA_{eq}	10.3 dB
LAI_{eq}	66.7 dB	LAI_{eq} - LA_{eq}	2.9 dB

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpk > 135.0 dB	0	0:00:00.0
LASpk > 137.0 dB	0	0:00:00.0
LASpk > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	63.8 dB		--- dB		--- dB	
$LS_{(max)}$	80.8 dB	2025-06-12 17:32:34	--- dB	None	--- dB	None
$LS_{(min)}$	48.7 dB	2025-06-12 17:35:06	--- dB	None	--- dB	None
$L_{Peak(max)}$	104.0 dB	2025-06-12 17:38:38	--- dB	None	--- dB	None

Overloads	Count	Duration
	0	0:00:00.0

Statistics

LAS 2.0	70.4 dB
LAS 8.0	66.3 dB
LAS 25.0	62.9 dB
LAS 50.0	60.3 dB
LAS 90.0	55.4 dB
LAS 99.0	51.5 dB

Measurement Report

Report Summary

Meter's File Name	LxT_Data.072.s	Computer's File Name	LxT_0005424-20250612 181137-LxT_Data.072.ldbin
Meter	LxT1 0005424	Firmware	2.404
User	AC	Location	ST-2
Job Description	MBUS-4.0		
Note			

Start Time	2025-06-12 18:11:37	Duration	0:15:00.0		
End Time	2025-06-12 18:26:37	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2025-06-12 16:13:41	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	60.2 dB		
LAE	89.7 dB	SEA	--- dB
EA	104.7 µPa²h		
EA8	3.4 mPa²h		
EA40	16.8 mPa²h		
LAS_{peak}	100.5 dB	2025-06-12 18:20:14	
LAS_{max}	76.0 dB	2025-06-12 18:20:02	
LAS_{min}	43.9 dB	2025-06-12 18:14:33	
LA_{eq}	60.2 dB		
LC_{eq}	68.9 dB	LC_{eq} - LA_{eq}	8.7 dB
LAI_{eq}	63.0 dB	LAI_{eq} - LA_{eq}	2.8 dB

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpk > 135.0 dB	0	0:00:00.0
LASpk > 137.0 dB	0	0:00:00.0
LASpk > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	60.2 dB		--- dB		--- dB	
$LS_{(max)}$	76.0 dB	2025-06-12 18:20:02	--- dB	None	--- dB	None
$LS_{(min)}$	43.9 dB	2025-06-12 18:14:33	--- dB	None	--- dB	None
$L_{Peak(max)}$	100.5 dB	2025-06-12 18:20:14	--- dB	None	--- dB	None

Overloads	Count	Duration
	0	0:00:00.0

Statistics

LAS 2.0	69.1 dB
LAS 8.0	65.9 dB
LAS 25.0	59.2 dB
LAS 50.0	50.8 dB
LAS 90.0	46.3 dB
LAS 99.0	44.6 dB

Long-Term 24 Hour Continuous Noise Monitoring

Calculation Input Sheet

Project: MBUS-04.0

Date: June 12-13, 2025

Site: LT-1

Hour	Leq	Lmax	L50	L90
16:00	57.4	74.6	55.1	50.2
16:00	61.9	77.3	60.2	57.8
17:00	70.0	91.8	66.7	56.6
18:00	69.8	86.2	70.4	55.1
19:00	54.2	77.1	48.8	44.4
20:00	52.3	77.7	47.0	43.9
21:00	54.9	71.6	47.1	41.7
22:00	48.7	63.2	42.5	38.6
23:00	45.0	68.2	38.5	37.8
0:00	44.2	66.3	38.4	37.5
1:00	40.1	67.1	37.4	36.8
2:00	53.2	78.1	39.6	36.8
3:00	39.0	58.7	36.8	36.4
4:00	38.2	56.7	37.2	36.8
5:00	45.0	64.8	39.4	38.0
6:00	48.9	66.2	42.9	40.6
7:00	52.6	67.7	47.9	44.0
8:00	56.2	75.3	52.1	46.7
9:00	58.5	85.3	53.9	49.6
10:00	58.1	81.1	54.3	50.5
11:00	59.2	81.8	53.1	49.6
12:00	59.4	78.3	53.2	48.7
13:00	57.8	79.0	53.8	49.5
14:00	59.2	82.6	54.2	49.3

Averages

	Leq	Lmax	L50	L90
Daytime (7 a.m. - 7 p.m.)	63.5	80.1	56.2	50.6
Evening (7 p.m. - 9 p.m.)	53.9	75.5	47.6	43.3
Nighttime (9 p.m. - 7 a.m.)	47.2	65.5	39.2	37.7

Percentage of Energy

Daytime	96%
Evening	3%
Nighttime	2%

Calculated CNEL, dBA

61.5

Long-Term 24 Hour Continuous Noise Monitoring

Calculation Input Sheet

Project: MBUS-04.0

Date: June 12-13, 2025

Site: LT-2

Hour	Leq	Lmax	L50	L90
15:00	51.7	79.8	45.9	44.2
16:00	48.4	63.5	47.6	45.3
17:00	49.3	64.2	47.6	46.2
18:00	61.2	95.0	52.0	46.0
19:00	49.3	67.2	46.6	43.1
20:00	44.1	57.6	42.4	41.3
21:00	42.3	55.0	40.9	39.9
22:00	40.5	60.4	39.5	38.8
23:00	40.7	56.9	38.7	38.3
0:00	38.4	42.6	38.2	38.0
1:00	38.2	44.0	38.1	37.8
2:00	38.2	53.3	37.8	37.7
3:00	38.9	52.2	38.0	37.7
4:00	38.1	40.3	37.9	37.7
5:00	38.3	45.4	38.1	37.9
6:00	43.2	66.2	38.8	38.2
7:00	48.3	65.7	41.1	39.5
8:00	47.2	63.8	44.4	42.0
9:00	48.3	67.6	45.4	43.2
10:00	52.0	71.0	50.0	46.6
11:00	52.6	64.3	51.2	48.5
12:00	53.0	77.2	48.8	46.0
13:00	50.5	66.1	46.7	43.9
14:00	50.0	61.0	48.0	45.6

Averages

	Leq	Lmax	L50	L90
Daytime (7 a.m. - 7 p.m.)	53.3	69.9	47.4	44.8
Evening (7 p.m. - 9 p.m.)	46.3	59.9	43.3	41.4
Nighttime (9 p.m. - 7 a.m.)	39.8	51.3	38.3	38.0

Percentage of Energy

Daytime	92%
Evening	5%
Nighttime	3%

Calculated CNEL, dBA

52.0

Long-Term 24 Hour Continuous Noise Monitoring

Calculation Input Sheet

Project: MBUS-04.0

Date: June 12-13, 2025

Site: LT-3

Hour	Leq	Lmax	L50	L90
15:00	64.6	81.4	58.5	52.2
16:00	64.4	83.2	59.0	52.3
17:00	65.6	92.9	56.7	50.8
18:00	63.4	85.0	56.3	51.2
19:00	60.7	76.8	52.2	48.5
20:00	60.4	80.0	50.2	46.1
21:00	59.9	83.0	46.9	44.1
22:00	56.3	74.8	44.3	43.3
23:00	54.3	78.2	43.3	42.7
0:00	52.7	79.0	42.6	42.2
1:00	49.2	77.0	42.1	42.0
2:00	55.1	78.1	42.9	42.1
3:00	46.6	75.6	42.7	42.3
4:00	48.0	73.7	43.3	42.7
5:00	51.7	77.5	45.0	43.4
6:00	59.9	82.7	48.4	45.6
7:00	63.5	85.0	54.5	51.5
8:00	65.3	85.4	57.7	51.5
9:00	72.7	95.2	59.6	52.4
10:00	66.0	87.9	55.9	50.4
11:00	64.7	83.2	55.3	49.3
12:00	65.1	85.8	57.6	52.1
13:00	65.5	89.4	56.0	50.1
14:00	64.1	80.0	56.5	51.0

Averages

	Leq	Lmax	L50	L90
Daytime (7 a.m. - 7 p.m.)	66.4	86.2	57.0	51.2
Evening (7 p.m. - 9 p.m.)	60.3	79.9	49.8	46.2
Nighttime (9 p.m. - 7 a.m.)	54.5	77.4	43.8	42.9

Percentage of Energy

Daytime	90%
Evening	6%
Nighttime	4%

Calculated CNEL, dBA

65.6

Project: MBUS-4.0
User: AC
Location: LT-1

No.	Start Date	Start Time	End Time	Duration	L_{eq}	L_{max}	L_{min}	L_1	L_2	L_5	L_8	L_{10}	L_{25}	L_{50}	L_{90}	L_{95}	L_{99}
1	6/12/2025	3:00 PM	4:00 PM	1:00	57.4	74.6	47.7	66.4	64.8	62.2	60.8	60.2	57.5	55.1	50.2	49.5	48.6
2	6/12/2025	4:00 PM	5:00 PM	1:00	61.9	77.3	55.4	69.0	67.6	65.8	65.0	64.5	62.3	60.2	57.8	57.3	56.6
3	6/12/2025	5:00 PM	6:00 PM	1:00	70.0	91.8	47.6	77.5	76.2	74.6	73.8	73.5	71.8	66.7	56.6	54.6	50.7
4	6/12/2025	6:00 PM	7:00 PM	1:00	69.8	86.2	46.1	74.3	73.6	72.9	72.5	72.4	71.7	70.4	55.1	53.9	48.0
5	6/12/2025	7:00 PM	8:00 PM	1:00	54.2	77.1	43.0	63.3	61.6	59.3	58.0	57.2	53.2	48.8	44.4	43.9	43.3
6	6/12/2025	8:00 PM	9:00 PM	1:00	52.3	77.7	42.0	61.7	60.4	58.2	56.6	55.7	50.6	47.0	43.9	43.4	42.8
7	6/12/2025	9:00 PM	10:00 PM	1:00	54.9	71.6	40.2	65.1	63.3	61.1	59.8	59.1	54.8	47.1	41.7	41.0	40.4
8	6/12/2025	10:00 PM	11:00 PM	1:00	48.7	63.2	37.5	59.8	58.5	55.8	53.6	52.4	46.2	42.5	38.6	38.3	37.9
9	6/12/2025	11:00 PM	12:00 AM	1:00	45.0	68.2	37.4	57.8	55.4	48.7	44.7	43.4	39.4	38.5	37.8	37.7	37.5
10	6/12/2025	12:00 AM	1:00 AM	1:00	44.2	66.3	37.0	56.6	53.5	48.1	43.8	42.0	39.1	38.4	37.5	37.4	37.1
11	6/13/2025	1:00 AM	2:00 AM	1:00	40.1	67.1	36.7	44.9	42.1	39.4	38.6	38.4	37.8	37.4	36.8	36.8	36.7
12	6/13/2025	2:00 AM	3:00 AM	1:00	53.2	78.1	36.5	64.1	61.7	58.8	56.9	55.6	47.1	39.6	36.8	36.7	36.6
13	6/13/2025	3:00 AM	4:00 AM	1:00	39.0	58.7	36.3	48.6	41.5	37.8	37.5	37.4	37.1	36.8	36.4	36.4	36.3
14	6/13/2025	4:00 AM	5:00 AM	1:00	38.2	56.7	36.6	44.4	42.5	38.8	38.2	38.1	37.6	37.2	36.8	36.7	36.6
15	6/13/2025	5:00 AM	6:00 AM	1:00	45.0	64.8	37.0	58.1	54.9	47.8	45.4	44.5	40.9	39.4	38.0	37.7	37.3
16	6/13/2025	6:00 AM	7:00 AM	1:00	48.9	66.2	38.3	60.4	58.7	55.6	53.3	52.0	45.7	42.9	40.6	39.8	38.7
17	6/13/2025	7:00 AM	8:00 AM	1:00	52.6	67.7	42.1	62.6	61.3	59.0	57.6	56.7	51.7	47.9	44.0	43.4	42.7
18	6/13/2025	8:00 AM	9:00 AM	1:00	56.2	75.3	43.3	64.4	63.2	61.6	60.6	60.0	56.8	52.1	46.7	45.9	44.8
19	6/13/2025	9:00 AM	10:00 AM	1:00	58.5	85.3	46.2	66.8	64.5	61.9	60.8	60.3	57.2	53.9	49.6	48.8	47.9
20	6/13/2025	10:00 AM	11:00 AM	1:00	58.1	81.1	46.9	68.4	66.0	62.4	60.5	59.9	56.8	54.3	50.5	49.7	48.4
21	6/13/2025	11:00 AM	12:00 PM	1:00	59.2	81.8	46.2	70.6	65.8	62.2	60.8	60.2	56.8	53.1	49.6	49.0	47.8
22	6/13/2025	12:00 PM	1:00 PM	1:00	59.4	78.3	46.2	71.1	68.8	64.7	62.4	61.6	57.7	53.2	48.7	48.0	47.1
23	6/13/2025	1:00 PM	2:00 PM	1:00	57.8	79.0	46.8	67.3	65.4	62.7	60.7	60.0	57.1	53.8	49.5	48.7	47.7
24	6/13/2025	2:00 PM	3:00 PM	1:00	59.2	82.6	46.2	69.4	67.1	63.4	62.9	62.7	57.8	54.2	49.3	48.5	47.5

Project: MBUS-4.0
User: AC
Location: LT-2

No.	Start Date	Start Time	End Time	Duration	L_{eq}	L_{max}	L_{min}	L_1	L_2	L_5	L_8	L_{10}	L_{25}	L_{50}	L_{90}	L_{95}	L_{99}
1	6/12/2025	3:00 PM	4:00 PM	1:00	51.7	79.8	43.0	61.9	59.7	56.2	54.3	53.2	48.6	45.9	44.2	43.9	43.4
2	6/12/2025	4:00 PM	5:00 PM	1:00	48.4	63.5	44.0	53.9	52.8	51.2	50.5	50.1	48.8	47.6	45.3	44.8	44.3
3	6/12/2025	5:00 PM	6:00 PM	1:00	49.3	64.2	44.2	58.2	55.9	52.9	51.7	51.0	48.7	47.6	46.2	45.7	45.0
4	6/12/2025	6:00 PM	7:00 PM	1:00	61.2	95.0	42.9	65.1	63.5	60.9	59.4	58.6	55.4	52.0	46.0	45.2	44.2
5	6/12/2025	7:00 PM	8:00 PM	1:00	49.3	67.2	41.9	57.5	55.9	54.4	53.6	52.9	48.3	46.6	43.1	42.8	42.3
6	6/12/2025	8:00 PM	9:00 PM	1:00	44.1	57.6	40.1	52.1	50.4	47.7	46.3	45.7	43.4	42.4	41.3	41.0	40.5
7	6/12/2025	9:00 PM	10:00 PM	1:00	42.3	55.0	39.5	48.6	47.2	45.3	44.4	43.8	42.0	40.9	39.9	39.8	39.6
8	6/12/2025	10:00 PM	11:00 PM	1:00	40.5	60.4	38.4	47.5	45.2	42.5	41.5	41.0	39.9	39.5	38.8	38.7	38.5
9	6/12/2025	11:00 PM	12:00 AM	1:00	40.7	56.9	38.2	50.6	47.1	43.0	41.6	40.9	39.2	38.7	38.3	38.2	38.2
10	6/13/2025	12:00 AM	1:00 AM	1:00	38.4	42.6	38.0	40.6	39.6	38.8	38.6	38.6	38.3	38.2	38.0	38.0	37.9
11	6/13/2025	1:00 AM	2:00 AM	1:00	38.2	44.0	37.8	40.4	39.0	38.5	38.4	38.3	38.2	38.1	37.8	37.8	37.7
12	6/13/2025	2:00 AM	3:00 AM	1:00	38.2	53.3	37.7	38.8	38.4	38.1	38.1	38.0	37.9	37.8	37.7	37.7	37.6
13	6/13/2025	3:00 AM	4:00 AM	1:00	38.9	52.2	37.7	45.5	42.8	40.2	39.4	39.0	38.2	38.0	37.7	37.7	37.7
14	6/13/2025	4:00 AM	5:00 AM	1:00	38.1	40.3	37.7	38.4	38.4	38.2	38.2	38.2	38.1	37.9	37.7	37.7	37.7
15	6/13/2025	5:00 AM	6:00 AM	1:00	38.3	45.4	37.8	39.0	38.8	38.6	38.5	38.4	38.2	38.1	37.9	37.8	37.8
16	6/13/2025	6:00 AM	7:00 AM	1:00	43.2	66.2	38.0	54.8	52.4	46.7	43.8	42.7	39.8	38.8	38.2	38.1	38.0
17	6/13/2025	7:00 AM	8:00 AM	1:00	48.3	65.7	38.5	60.2	58.6	54.9	51.9	50.8	43.6	41.1	39.5	39.2	38.8
18	6/13/2025	8:00 AM	9:00 AM	1:00	47.2	63.8	40.4	56.7	55.5	53.1	50.7	49.4	46.5	44.4	42.0	41.6	41.1
19	6/13/2025	9:00 AM	10:00 AM	1:00	48.3	67.6	42.0	58.1	55.9	52.1	50.8	50.2	47.7	45.4	43.2	42.9	42.4
20	6/13/2025	10:00 AM	11:00 AM	1:00	52.0	71.0	44.0	59.3	58.3	56.5	55.4	54.9	52.3	50.0	46.6	46.0	45.1
21	6/13/2025	11:00 AM	12:00 PM	1:00	52.6	64.3	45.2	59.4	58.3	57.0	56.1	55.6	53.2	51.2	48.5	47.7	46.6
22	6/13/2025	12:00 PM	1:00 PM	1:00	53.0	77.2	43.5	60.3	58.2	55.3	53.9	53.3	51.0	48.8	46.0	45.4	44.3
23	6/13/2025	1:00 PM	2:00 PM	1:00	50.5	66.1	42.0	60.2	58.2	56.1	54.7	54.0	50.2	46.7	43.9	43.5	42.8
24	6/13/2025	2:00 PM	3:00 PM	1:00	50.0	61.0	42.8	57.1	56.5	55.0	54.1	53.4	50.0	48.0	45.6	45.1	44.2

Project: MBUS-4.0
User: AC
Location: LT-3

No.	Start Date	Start Time	End Time	Duration	L_{eq}	L_{max}	L_{min}	L_1	L_2	L_5	L_8	L_{10}	L_{25}	L_{50}	L_{90}	L_{95}	L_{99}
1	6/12/2025	3:00 PM	4:00 PM	1:00	64.6	81.4	49.5	73.7	72.3	70.5	69.5	68.9	65.1	58.5	52.2	51.4	50.4
2	6/12/2025	4:00 PM	5:00 PM	1:00	64.4	83.2	49.2	73.1	72.1	70.3	69.2	68.6	65.1	59.0	52.3	51.3	50.3
3	6/12/2025	5:00 PM	6:00 PM	1:00	65.6	92.9	48.4	74.2	72.9	71.0	69.7	69.0	64.3	56.7	50.8	49.7	48.9
4	6/12/2025	6:00 PM	7:00 PM	1:00	63.4	85.0	47.9	72.8	71.4	69.4	68.2	67.3	62.4	56.3	51.2	50.6	48.8
5	6/12/2025	7:00 PM	8:00 PM	1:00	60.7	76.8	46.7	72.2	71.0	68.2	66.1	64.6	56.8	52.2	48.5	48.0	47.3
6	6/12/2025	8:00 PM	9:00 PM	1:00	60.4	80.0	44.6	72.3	70.9	67.8	65.3	63.7	54.9	50.2	46.1	45.4	44.9
7	6/12/2025	9:00 PM	10:00 PM	1:00	59.9	83.0	43.4	72.0	70.4	67.3	64.0	62.0	53.3	46.9	44.1	43.8	43.5
8	6/12/2025	10:00 PM	11:00 PM	1:00	56.3	74.8	42.9	70.3	67.8	61.7	57.5	55.6	47.2	44.3	43.3	43.2	43.0
9	6/12/2025	11:00 PM	12:00 AM	1:00	54.3	78.2	42.4	68.9	64.7	55.0	50.6	49.0	44.1	43.3	42.7	42.6	42.4
10	6/13/2025	12:00 AM	1:00 AM	1:00	52.7	79.0	42.0	65.0	56.6	50.4	45.6	44.3	43.1	42.6	42.2	42.1	42.0
11	6/13/2025	1:00 AM	2:00 AM	1:00	49.2	77.0	41.9	56.7	52.6	44.8	43.3	42.9	42.3	42.1	42.0	41.9	41.9
12	6/13/2025	2:00 AM	3:00 AM	1:00	55.1	78.1	41.9	69.3	65.9	56.2	52.0	49.7	44.2	42.9	42.1	42.0	41.9
13	6/13/2025	3:00 AM	4:00 AM	1:00	46.6	75.6	42.1	46.1	44.9	43.9	43.7	43.6	43.1	42.7	42.3	42.2	42.1
14	6/13/2025	4:00 AM	5:00 AM	1:00	48.0	73.7	42.5	57.8	51.8	46.8	45.5	45.1	44.0	43.3	42.7	42.7	42.6
15	6/13/2025	5:00 AM	6:00 AM	1:00	51.7	77.5	42.7	61.0	55.8	51.6	49.4	48.6	46.4	45.0	43.4	43.2	42.9
16	6/13/2025	6:00 AM	7:00 AM	1:00	59.9	82.7	44.1	72.4	70.4	64.7	60.2	58.7	52.6	48.4	45.6	45.0	44.5
17	6/13/2025	7:00 AM	8:00 AM	1:00	63.5	85.0	48.3	74.9	73.1	70.3	68.1	66.6	58.5	54.5	51.5	50.9	49.5
18	6/13/2025	8:00 AM	9:00 AM	1:00	65.3	85.4	46.9	75.4	74.3	72.2	70.9	70.0	63.0	57.7	51.5	50.3	48.3
19	6/13/2025	9:00 AM	10:00 AM	1:00	72.7	95.2	47.9	84.2	82.5	77.2	74.8	73.7	67.6	59.6	52.4	51.1	49.2
20	6/13/2025	10:00 AM	11:00 AM	1:00	66.0	87.9	47.2	77.0	74.8	72.0	70.4	69.5	63.3	55.9	50.4	49.8	48.7
21	6/13/2025	11:00 AM	12:00 PM	1:00	64.7	83.2	47.1	74.9	73.6	71.6	70.3	69.5	63.5	55.3	49.3	48.7	48.1
22	6/13/2025	12:00 PM	1:00 PM	1:00	65.1	85.8	47.8	75.1	73.7	71.2	69.9	69.1	63.7	57.6	52.1	50.5	48.8
23	6/13/2025	1:00 PM	2:00 PM	1:00	65.5	89.4	47.6	74.8	73.2	71.2	70.1	69.3	64.1	56.0	50.1	49.3	48.6
24	6/13/2025	2:00 PM	3:00 PM	1:00	64.1	80.0	48.7	73.7	72.7	71.0	69.9	69.2	63.4	56.5	51.0	50.3	49.5

LONG-TERM MEASURMENT DATA SHEET

Date: Drop off 6/12 **Pick up** 6/13

Project Number/Name: MBUS-4.0

Monitoring Personnel: AC

Meter Settings:

☐ Larson Davis Lxt ☐ Larson Davis 820 Meter Kit #: 1

☒ A-Weighted ☒ Slow ☐ Fast ☒ Windscreen

Calibration

LD CAL 200 ☐ SN-14280 ☒ SN-14279 1 kHz Tone Reference Level: ☐ 94 dB ☐ 114 dB

Calibration Offset Prior: 93.3 Offset After: 90.8

Time of meter mounted: 2:00pm ☒ Photos: yes

Site Location/Address: Western side of Peck Ave. Southern portion of Track & Field

Primary Noise Source: Waiting line for graduation; cheering/yelling/whistleing, PA system in use & music.

Traffic counts in both directions (15 minute)

Roadway	# Lanes	Posted Speed	Autos	MD	HD

Additional Notes:

52m from 1st light pole on field; 19m from Residential wall

LONG-TERM MEASURMENT DATA SHEET

Date: Drop off 6/12 **Pick up** 6/13

Project Number/Name: MBUS-40

Monitoring Personnel: AC

Meter Settings:

☐ Larson Davis Lxt ☐ Larson Davis 820 Meter Kit #: 2

☒ A-Weighted ☒ Slow ☐ Fast ☒ Windscreen

Calibration

LD CAL 200 ☐ SN-14280 ☒ SN-14279 1 kHz Tone Reference Level: ☐ 94 dB ☐ 114 dB

Calibration Offset Prior: 94.3 Offset After: 94.6

Time of meter mounted: 1:26 pm ☒ Photos: yes

Site Location/Address: South western corner of district lot

Primary Noise Source: Vehicles from Voorhees Ave; Students on Track & Field; PA prior to graduation; music; planes overhead

Traffic counts in both directions (15 minute)

Roadway	# Lanes	Posted Speed	Autos	MD	HD

Additional Notes:

75in CMU wall

15m from Track & Field fence, 65in from District Building

LONG-TERM MEASURMENT DATA SHEET

Date: Drop off 6/12 **Pick up** 6/13

Project Number/Name: MBUS-40

Monitoring Personnel: AC

Meter Settings:

☐ Larson Davis Lxt ☐ Larson Davis 820 Meter Kit #: 3

☒ A-Weighted ☒ Slow ☐ Fast ☒ Windscreen

Calibration

LD CAL 200 ☐ SN-14280 ☒ SN-14279 1 kHz Tone Reference Level: ☒ 94 dB ☐ 114 dB

Calibration Offset Prior: 92.4 Offset After: 92.2

Time of meter mounted: 2:32 pm ☒ Photos: yes

Site Location/Address: West side of Meadows Ave. (1280 Bryant Place)

Primary Noise Source: Car traffic; students practicing at campus fields; Students & Residents walking/talking; Residential noise

Traffic counts in both directions (15 minute)

Roadway	# Lanes	Posted Speed	Autos	MD	HD

Additional Notes:

Project Name: _____ Date: 6/19/25

Project Number: MBUS - 4.0 Monitoring Personnel: AL

Monitoring Site #: ST #1 Time Start: 5:30 End: 5:45

Site Location/Address: At the corner of Peck Ave. & Voorhees Ave (1501 Voorhees Ave.)

Primary Noise Source: Graduation - Students' crowd cheering

Measurement Results	
Percentiles	dBA
Leq	63.8
Lmax	80.8
Lmin	48.7
L2	70.4
L8	66.3
L25	62.9
L50	60.3
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
5:32	Police Cart	73 dBA
5:40	Air horn	67 dBA
5:43	Police Cart	79 dBA

Data File: 71 ☒ Photos: yes

Comments (sound walls, height, etc..) 4.5 ft wall / residence raised

Max Wind Velocity (knots/hr)	Average Wind Velocity (knots/hr)	Temperature (F)	Relative Humidity (%)
13 mph		68	70%

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD

Project Name: _____ Date: 6/12/25

Project Number: MBUS-4.0 Monitoring Personnel: AC

Monitoring Site #: ST #2 Time Start: 6:11 End: 6:26

Site Location/Address: West of Meadows Ave - 1280 Shelley Street

Primary Noise Source: Car/Roadway noise S. Meadows Ave, students walking/talking/practicing @ field

Measurement Results	
Percentiles	dBA
Leq	60.2
Lmax	76
Lmin	43.9
L2	69.1
L8	65.9
L25	59.2
L50	50.8
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA

Data File: 72 ☒ Photos: yes

Comments (sound walls, height, etc..)_____

Max Wind Velocity (knots/hr)	Average Wind Velocity (knots/hr)	Temperature (F)	Relative Humidity (%)
13 mph		68	70%

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD

MBUS-04 - Construction Noise Modeling Attenuation Calculations

Levels in dBA Leq

Phase	RCNM Reference Noise Level	Receptor to North	Receptor to East	Receptor to South	Receptor to West
Distance in feet	*50*	*400*	*550*	*445*	*385*
Demolition	84	66	63	65	66
Distance in feet	*50*	*450*	*580*	*450*	*425*
Site Prep	84	65	63	65	65
Grading	85	66	64	66	66
Building Construction	80	61	59	61	61
Architectural Coating	74	55	53	55	55
Distance in feet	*50*	*405*	*500*	*290*	*460*
Paving	80	62	60	65	61
Distance in feet	*50*	*40*	*150*	*450*	*70*
Utility Trenching	76	78	66	57	73
Light Installation	74	76	64	55	71

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/18/2025
Case Description: MBUS-04.0 Demolition

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.6	83.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/18/2025
Case Description: MBUS-04.0 Site Preparation

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	83.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/18/2025
Case Description: MBUS-04.0 Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	83.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/18/2025
Case Description: MBUS-04.0 Building Construction

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	50.0	0.0
Generator	No	50		80.6	50.0	0.0
Welder / Torch	No	40		74.0	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	74.0	70.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.6	79.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/18/2025
Case Description: MBUS-04.0 Architectural Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/18/2025
Case Description: MBUS-04.0 Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Drum Mixer	No	50		80.0	50.0	0.0
Paver	No	50		77.2	50.0	0.0
Roller	No	20		80.0	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Drum Mixer	80.0	77.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.0	79.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/18/2025
Case Description: MBUS-04.0 Utility Trenching - Field

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Man Lift	No	20		74.7	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Man Lift	74.7	67.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	79.1	75.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Report date: 09/18/2025
Case Description: MBUS-04.0 Field Lighting Installation - Field

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Equipment Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	50.0	0.0
Man Lift	No	20		74.7	50.0	0.0

Results

Equipment		Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Crane		80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift		74.7	67.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	80.6	73.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

MBUS-04 - Vibration Damage Attenuation Calculations

Levels, PPV (in/sec)

Distance in feet	**Vibration Reference Level at *25 feet***	**Receptor to North** *30*	**Receptor to East** *150*	**Receptor to South** *290*	**Receptor to West** *70*
Vibratory Roller	0.21	0.160	0.014	0.005	0.045
Clam shovel	0.202	0.154	0.014	0.005	0.043
Hoe Ram	0.089	0.068	0.006	0.002	0.019
Large Bulldozer	0.089	0.068	0.006	0.002	0.019
Caisson Drilling	0.089	0.068	0.006	0.002	0.019
Loaded Trucks	0.076	0.058	0.005	0.002	0.016
Jackhammer	0.035	0.027	0.002	0.001	0.007
Small Bulldozer	0.003	0.002	0.000	0.000	0.001

Traffic Noise Calculator: FHWA 77-108 — **Mira Costa HS Field Renovation, Lighting, and FMP (MBUS-04.0) Existing Traffic Noise Traffic Conditions**

	Output						Inputs														Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour			Segment															
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	From - To		ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	68.6	71.4	72.1	69	148	319	Artesia Boulevard	the West	South Peck Avenue	28,242	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
2	68.2	71.0	71.7	65	140	301	Artesia Boulevard	South Peck Avenue	the East	25,904	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
3	55.8	57.4	58.3	8	18	38	South Peck Avenue	the North	Artesia Boulevard	4,005	25	0.0%	96.0%	2.5%	1.5%	80.0%	15.0%	5.0%	2	Soft	50	0.5	20
4	55.0	57.8	58.4	8	18	39	Meadows Avenue	Artesia Boulevard	the North	3,317	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
5	46.0	47.6	48.5	2	4	9	Vorhees Avenue	South Peck Avenue	the East	420	25	0.0%	96.0%	2.5%	1.5%	80.0%	15.0%	5.0%	2	Soft	50	0.5	20
6	45.2	46.8	47.7	2	4	8	Ruthland Avenue	South Peck Avenue	the East	350	25	0.0%	96.0%	2.5%	1.5%	80.0%	15.0%	5.0%	2	Soft	50	0.5	20
7	46.6	48.3	49.2	2	4	10	Nelson Avenue	South Peck Avenue	the East	510	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	5.0%	2	Soft	50	0.5	20
8	54.3	55.9	56.8	7	14	31	South Prospect Avneue	Artesia Boulevard	the North	2,960	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	5.0%	2	Soft	50	0.5	20
9	59.2	60.8	61.7	14	30	65	Keates Street	South Meadows Avenue	the West	2,580	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	5.0%	4	Soft	50	0.5	44

Traffic Noise Calculator: FHWA 77-108	Mira Costa HS Field Renovation, Lighting, and FMP (MBUS-04.0) Existing With Project Traffic Noise Traffic Conditions																						
	Output						Inputs															Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour			Segment																
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	From - To		ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	68.6	71.4	72.1	69	148	320	Artesia Boulevard	the West	South Peck Avenue	28,299	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
2	68.3	71.1	71.7	65	141	303	Artesia Boulevard	South Peck Avenue	the East	26,163	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
3	55.8	57.4	58.3	8	18	39	South Peck Avenue	the North	Artesia Boulevard	4,045	25	0.0%	96.0%	2.5%	1.5%	80.0%	15.0%	5.0%	2	Soft	50	0.5	20
4	55.0	57.8	58.5	9	18	40	Meadows Avenue	Artesia Boulevard	the North	3,350	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
5	46.0	47.6	48.5	2	4	9	Vorhees Avenue	South Peck Avenue	the East	420	25	0.0%	96.0%	2.5%	1.5%	80.0%	15.0%	5.0%	2	Soft	50	0.5	20
6	45.2	46.8	47.7	2	4	8	Ruthland Avenue	South Peck Avenue	the East	350	25	0.0%	96.0%	2.5%	1.5%	80.0%	15.0%	5.0%	2	Soft	50	0.5	20
7	46.6	48.3	49.2	2	4	10	Nelson Avenue	South Peck Avenue	the East	510	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	5.0%	2	Soft	50	0.5	20
8	54.2	55.9	56.8	7	14	31	South Prospect Avneue	Artesia Boulevard	the North	2,930	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	5.0%	2	Soft	50	0.5	20
9	59.2	60.9	61.8	14	31	66	Keates Street	South Meadows Avenue	the West	2,610	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	5.0%	4	Soft	50	0.5	44

Traffic Noise Calculator: FHWA 77-108 — **Mira Costa HS Field Renovation, Lighting, and FMP (MBUS-04.0) Opening Year 2026 No Project Traffic Noise Traffic Conditions**

	Output						Inputs													Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From	Segment To	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	68.6	71.4	72.1	69	149	321	Artesia Boulevard	the West	South Peck Avenue	28,524	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
2	68.3	71.1	71.7	65	141	303	Artesia Boulevard	South Peck Avenue	the East	26,163	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
3	55.8	57.4	58.3	8	18	39	South Peck Avenue	the North	Artesia Boulevard	4,045	25	0.0%	96.0%	2.5%	1.5%	80.0%	15.0%	5.0%	2	Soft	50	0.5	20
4	55.0	57.8	58.5	9	18	40	Meadows Avenue	Artesia Boulevard	the North	3,350	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
5	46.0	47.6	48.5	2	4	9	Vorhees Avenue	South Peck Avenue	the East	420	25	0.0%	96.0%	2.5%	1.5%	80.0%	15.0%	5.0%	2	Soft	50	0.5	20
6	45.2	46.8	47.7	2	4	8	Ruthland Avenue	South Peck Avenue	the East	350	25	0.0%	96.0%	2.5%	1.5%	80.0%	15.0%	5.0%	2	Soft	50	0.5	20
7	46.6	48.3	49.2	2	4	10	Nelson Avenue	South Peck Avenue	the East	510	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	5.0%	2	Soft	50	0.5	20
8	54.2	55.9	56.8	7	14	31	South Prospect Avneue	Artesia Boulevard	the North	2,950	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	5.0%	2	Soft	50	0.5	20
9	59.2	60.9	61.8	14	31	66	Keates Street	South Meadows Avenue	the West	2,610	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	5.0%	4	Soft	50	0.5	44

Traffic Noise Calculator: FHWA 77-108 — **Mira Costa HS Field Renovation, Lighting, and FMP (MBUS-04.0) Opening Year 2026 with Project Traffic Noise Traffic Conditions**

	Output						Inputs													Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From	Segment To	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	68.7	71.4	72.1	69	149	322	Artesia Boulevard	the West	South Peck Avenue	28,581	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
2	68.3	71.1	71.8	65	141	304	Artesia Boulevard	South Peck Avenue	the East	26,220	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44
3	55.9	57.5	58.4	8	18	39	South Peck Avenue	the North	Artesia Boulevard	4,081	25	0.0%	96.0%	2.5%	1.5%	80.0%	15.0%	5.0%	2	Soft	50	0.5	20
4	55.1	57.9	58.6	9	19	40	Meadows Avenue	Artesia Boulevard	the North	3,429	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
5	46.0	47.6	48.5	2	4	9	Vorhees Avenue	South Peck Avenue	the East	420	25	0.0%	96.0%	2.5%	1.5%	80.0%	15.0%	5.0%	2	Soft	50	0.5	20
6	45.2	46.8	47.7	2	4	8	Ruthland Avenue	South Peck Avenue	the East	350	25	0.0%	96.0%	2.5%	1.5%	80.0%	15.0%	5.0%	2	Soft	50	0.5	20
7	46.6	48.3	49.2	2	4	10	Nelson Avenue	South Peck Avenue	the East	510	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	5.0%	2	Soft	50	0.5	20
8	54.2	55.9	56.8	7	14	31	South Prospect Avneue	Artesia Boulevard	the North	2,950	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	5.0%	2	Soft	50	0.5	20
9	59.3	60.9	61.8	14	31	66	Keates Street	South Meadows Avenue	the West	2,640	45	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	5.0%	4	Soft	50	0.5	44

APPENDIX I:
TRANSPORTATION



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MIRA COSTA HIGH SCHOOL

TRANSPORTATION ANALYSIS

Prepared for:
PlaceWorks

Prepared by:
DJ&A, P.C.

November 20, 2025

Table of Contents

1. Introduction 1
1.1 Project Description 1
2. Methodology 2
2.1 Vehicle Miles Travelled Analysis 2
2.2 Intersection Analysis 2
2.3 Determination of Significant Impacts 2
2.4 Intersection and Driveway Counts 3
2.5 Average Daily Traffic Counts 3
2.6 Project Opening Year and Traffic Growth Rate 3
2.7 Traffic Study Periods and Scenarios 3
2.8 Parking Analysis 4
3. Study Area 5
3.1 Study Intersections 5
3.2 Existing Roadway Network 5
3.3 Transit Services 8
3.4 Bicycle and Pedestrian Facilities 8
3.5 Existing Parking Supply 8
4. Existing Conditions 10
4.1 Average Daily Traffic 10
4.2 Intersection and Driveway Level of Service 10
5. Opening Year (2026) No Project 15
5.1 Average Daily Traffic 15
5.2 Intersection Level of Service 15
6. Project Conditions 18
6.1 Trip Generation and Distribution 18
6.2 With Project ADT Volumes 20
6.3 Existing Year (2025) with Project Intersection and Driveway Analysis 22
6.4 Opening Year (2026) with Project Intersection and Driveway Analysis 25
6.5 Parking Analysis 28
6.6 VMT Analysis 30
6.7 Site Access 31
7. Conclusion 33
References 34

List of Tables

Table 1 Level of Service Rating 3
Table 2 On-Site Parking Supply 8

Table 3 Roadway Average Daily Traffic (ADT) 10
Table 4 Existing Intersection and Driveway Level of Service 10
Table 5 Estimated ADT Opening Year No Project 15
Table 6 Opening Year (2026) No Project Intersection LOS 15
Table 7 Proposed Event Schedule with Proposed Lighting (End Cap) 18
Table 8 Proposed Event Schedule with Proposed Lighting (West Field) 19
Table 9 Project Trip Generation 20
Table 10 With Project ADT Volumes 20
Table 11 Existing Year (2025) With Project Intersection LOS 22
Table 12 Opening Year (2026) With Project Intersection LOS 25
Table 13 Existing Year (2025) Parking Occupancy Data 28
Table 14 Existing Year (2025) Parking Occupancy Percentage 28

List of Figures

Figure 1 Project Site and Driveway Locations 6
Figure 2 Project Site and Study Intersection Locations 7
Figure 3 Parking Locations 9
Figure 4 Driveway Geometry 11
Figure 5 Intersection Geometry 12
Figure 6 Existing Year (2025) Driveway No Project Volumes 13
Figure 7 Existing Year (2025) Intersection No Project Volumes 14
Figure 8 Opening Year (2026) Driveway No Project Volumes 16
Figure 9 Opening Year (2026) Intersection No Project Volumes 17
Figure 10 Project Trip Distribution 21
Figure 11 Existing Year (2025) Driveway With Project Volumes 23
Figure 12 Existing Year (2025) Intersection With Project Volumes 24
Figure 13 Opening Year (2026) Driveway With Project Volumes 26
Figure 14 Opening Year (2026) Intersection With Project Volumes 27
Figure 15 E-Bike Parking Locations 32

Appendices

Appendix A—Turning Movement & Roadway Segment Counts A-1
Appendix B—Parking Utilization Counts B-1
Appendix C—HCS Reports [2025 Existing] C-1
Appendix D—HCS Reports [2025 With Project] D-1
Appendix E—Synchro Reports [2026 No Project] E-1
Appendix F—Synchro Reports [2026 With Project] F-1

1. Introduction

Mira Costa High School is located at 1401 Artesia Boulevard in the City of Manhattan Beach. This transportation analysis report analyzes traffic and parking conditions associated with proposed improvements to the school. The proposed improvements involve field lighting improvements and building modernization and would not result in an increase in student capacity. Based on this proposed condition, the transportation analysis includes the following elements:

- Site Circulation analysis – including review of site access driveways, adjacent intersections, pick-up/drop-off activities, and queuing
- VMT screening
- Parking analysis

A description of the changes anticipated for the fields at Mira Costa High School is provided below. The proposed building modifications are not expected to result in changes to student capacity, traffic patterns, or traffic trip generation. Therefore, these project elements are not considered in this transportation analysis.

1.1 Project Description

The proposed project would replace existing field lights at the Waller Football Stadium in the northeast quadrant of the campus; install new field lights at the West Field in the northwest quadrant of the campus; and install new field lights on the softball/baseball fields in the southwest quadrant of the campus. The project would also include the installation of a new E-Bike parking area, and improvements identified in the District's Mira Costa High School Campus Master Plan, which includes demolition, new construction, modernization, and renovation of buildings on campus.

No changes to the sports event schedule or activity use would occur at Waller Stadium, only upgrades to the existing field lighting fixtures. No changes to the number or types of events at the softball/baseball fields are anticipated with the proposed lighting improvements.

The primary changes to events and activities with the proposed project would occur in the West Field area. Currently, the southern portion of the West Field, which is referred to as the 'End Cap" accommodates 171 events per year, seven days a week, 12 months out of the year, with start and end times ranging from 9:00am to 8:00pm and attendance ranging from 20 to 30 people per event. Under the proposed project, the End Cap would accommodate an additional 320 events per year, seven days a week, 12 months out of the year, with start and end times ranging from 9:00am to 9:00pm and attendance would range from 20 to 40 people per event. Overall, the numbers of events at the End Cap would increase by 320 events, and end times would extend from 8:00pm to 9:00pm, under the proposed project.

West Field (not including the End Cap) currently accommodates 318 events per year, one to seven days a week, 12 months out of the year, with start and end times ranging from 9:00am to 8:00pm and attendance ranging from 40 to 400 people. Under the proposed project, West Field would accommodate 276 additional events per year, seven days a week, 12 months out of the year, with start and end times ranging from 9:00am to 9:00pm and attendance ranging from 40 to 400 people. In summary, the number of events at West Field would increase by 276 events, and end times would extend from 8:00pm to 9:00pm, under the proposed project. Attendance at the new events proposed in the West Field would average 40 people per event.

2. Methodology

Manhattan Beach Unified School District (MBUSD) operates as the lead agency for the preparation of this transportation analysis and environmental review is being completed following the requirements of the California Environmental Quality Act (CEQA). As lead agency, MBUSD is the approving agency for both the transportation analysis and overall CEQA document. MBUSD has not established specific requirements for the completion of a transportation analysis. Therefore, this analysis follows the transportation impact analysis guidelines established by the City of Manhattan Beach. This approach provides consistency between this analysis and other transportation impact analyses conducted in the vicinity of the project location.

2.1 Vehicle Miles Travelled Analysis

The project is evaluated for potential impacts related to Vehicle Miles Travelled consistent with the requirements contained in the City of Manhattan Beach Transportation Impact Analysis Guidelines. These guidelines establish that a project could have a potentially significant VMT impact if it meets one or more of the criteria listed below. These impact criteria are based on latest guidance published by Office of Planning and Research (OPR) and the California Air Resources Board (CARB) to reach greenhouse gas reduction goals.

- Residential Projects. The project's residential VMT per capita would not be less than 16.8% below the existing residential VMT per capita, (See Table 3-1)
- Non-Retail/Office Projects. The project's employment VMT per employee exceeding would not be less than 16.8% below the existing employment VMT per employee
- Regional Serving Retail Projects. The project would result in a net increase in existing total VMT
- Land Use Plans. The plan's total VMT per service population (residents and employees) would not be less than 16.8% below the existing VMT per service population

2.2 Intersection Analysis

The intersection and driveway analysis was also conducted consistent with the guidelines established by the City of Manhattan Beach. The city's guidelines call for analysis of intersection Level of Service (LOS) and queueing methodologies to utilize the latest edition of the Transportation Research Board Highway Capacity Manual (HCM) to evaluate the operation of the project driveways and nearby intersections.

2.3 Determination of Significant Impacts

Traffic levels of service (LOS) for unsignalized and signalized intersections and driveways are designated A through F, with LOS A representing free flow conditions and LOS F representing severe traffic congestion. Table 1 summarizes the criteria for intersection LOS calculations and the relationship between control delay and LOS, as defined in the HCM.

Each intersection's LOS is determined by the calculated control delay. All project intersections with an LOS rating of D or above have an acceptable LOS, consistent with the City of Manhattan Beach guidelines. Intersections with ratings E or F would be considered to have 'unacceptable' LOS.

Table 1 Level of Service Rating

LOS	Unsignalized Intersections and Driveways	Signalized Intersections
	Control Delay per Vehicle (sec/veh)	Control Delay per Vehicle (sec/veh)
A	≤ 10	≤ 10
B	> 10 to ≤ 15	> 10 to ≤ 20
C	> 15 to ≤ 25	> 20 to ≤ 35
D	> 25 to ≤ 35	> 35 to ≤ 55
E	> 35 to ≤ 50	> 55 to ≤ 80
F	> 50	> 80

2.4 Intersection and Driveway Counts

Weekday peak period traffic counts were completed at selected study intersections adjacent to the project site and existing driveways that provide access to and from the project site. This is consistent with the approach contained in the City of Manhattan Beach transportation impact analysis guidelines. Intersection counts were completed for the AM (7am-9am) and PM (4pm-6pm) peak periods on Tuesday, June 3, 2025. School was session during these counts and the day of the week.

The time periods selected for the traffic counts are consistent with the City of Manhattan Beach transportation impact analysis guidelines. It is recognized that many of the envisioned activities for the sports fields would be scheduled after 6pm in the evening. However, the city's and industry's standard approach for traffic impact studies is to analyze traffic conditions during the peak hours for background traffic on adjacent streets. This approach ensures that the potential impacts of the project are assessed during the peak time for background traffic volumes in the project study area. For events occurring on the project site between 7pm-9pm, this time period occurs outside of the PM peak hour for traffic and background traffic volumes on adjacent streets are typically lower than what occurs in the PM peak hours between 4pm-6pm.

2.5 Average Daily Traffic Counts

Average daily traffic (ADT) data was collected along selected roadways as a part of this study to support the separate noise and air quality analyses conducted as part of the CEQA environmental review. ADT data collection was completed on a typical weekday during the school year.

2.6 Project Opening Year and Traffic Growth Rate

The project opening year for the field lighting improvements is anticipated to be 2026. This is the analysis year selected for analysis in this report. An annual growth rate of 1% was applied to existing intersection and roadway volumes to develop traffic forecasts for 2026 conditions. This growth rate is consistent with City of Manhattan Beach guidelines.

2.7 Traffic Study Periods and Scenarios

Traffic operations for the study area intersections were evaluated for each of the following scenarios:

- Existing Conditions (2025) without Project
- Opening Year (2026) without Project

- Existing Conditions (2025) with Project
- Opening Year (2026) with Project

Roadway segment volumes are also reported for each of the scenarios noted above.

2.8 Parking Analysis

Parking occupancy counts were collected on Tuesday, June 3, 2025 in all existing parking lots located on the Mira Costa High School campus and on-street along the following roadways:

- Artesia Boulevard (north side only) between Meadows Avenue and Peck Avenue
- Peck Avenue between Artesia Boulevard and Ruhland Avenue
- Meadows Avenue between Artesia Boulevard and Keats Street

Parking occupancy counts were collected between 8am and 5pm to capture the peak parking demand period during the school day and early afternoon period for sports and activities.

3. Study Area

This section discusses the existing project site, site access driveways, and the surrounding transportation network, including roadways, transit services, and pedestrian and bicycle infrastructure. The existing parking supply for the school is also presented.

3.1 Study Intersections

The following intersections and roadway segments are included in this transportation impact analysis:

Study Intersections

1. S Peck Ave and Vorhees Ave
2. S Peck Ave and Ruhland Ave
3. S Peck Ave and Artesia Blvd
4. S Meadows Ave and Artesia Ave
5. S Prospect Ave and Artesia Ave
6. S Meadows Ave and Keats St

Driveway Intersections

1. S Peck Ave and Nelson-Driveway A
2. S Peck Ave and Driveway B
3. S Peck Ave and Driveway C
4. Artesia Blvd and Driveway D
5. Artesia Blvd and Driveway E
6. Artesia Blvd and Driveway F

Figure 1 illustrates the project site plan and driveway access points. Figure 2 identifies the locations of study intersections.

3.2 Existing Roadway Network

Selected roadways located in the vicinity of the project area are described in this section. Items of note include existing geometry, pedestrian and bicycle facilities, speed limit, parking facilities, and adjacent land uses. The selected roadways are as follows:

Artesia Boulevard

Artesia Boulevard is a four-lane, divided roadway that runs east–west along the southern boundary of the project site. The posted speed limit is 40 miles per hour. Sidewalks are provided on both the north and south sides of Artesia Boulevard, and the shoulders on each side accommodate parallel on-street parking. The surrounding area land use is predominantly low density residential.

Peck Avenue

Peck Avenue is a two-lane, undivided roadway that runs north–south along the eastern boundary of the project site. The posted speed limit is 25 miles per hour. Sidewalks are present on both the west and east sides of Peck Avenue. While dedicated bike lanes are not provided, shared-lane markings (sharrows) are present, indicating that the roadway is intended to be shared with bicycles. The road shoulders accommodate parallel parking. The surrounding land use is primarily low-density residential.



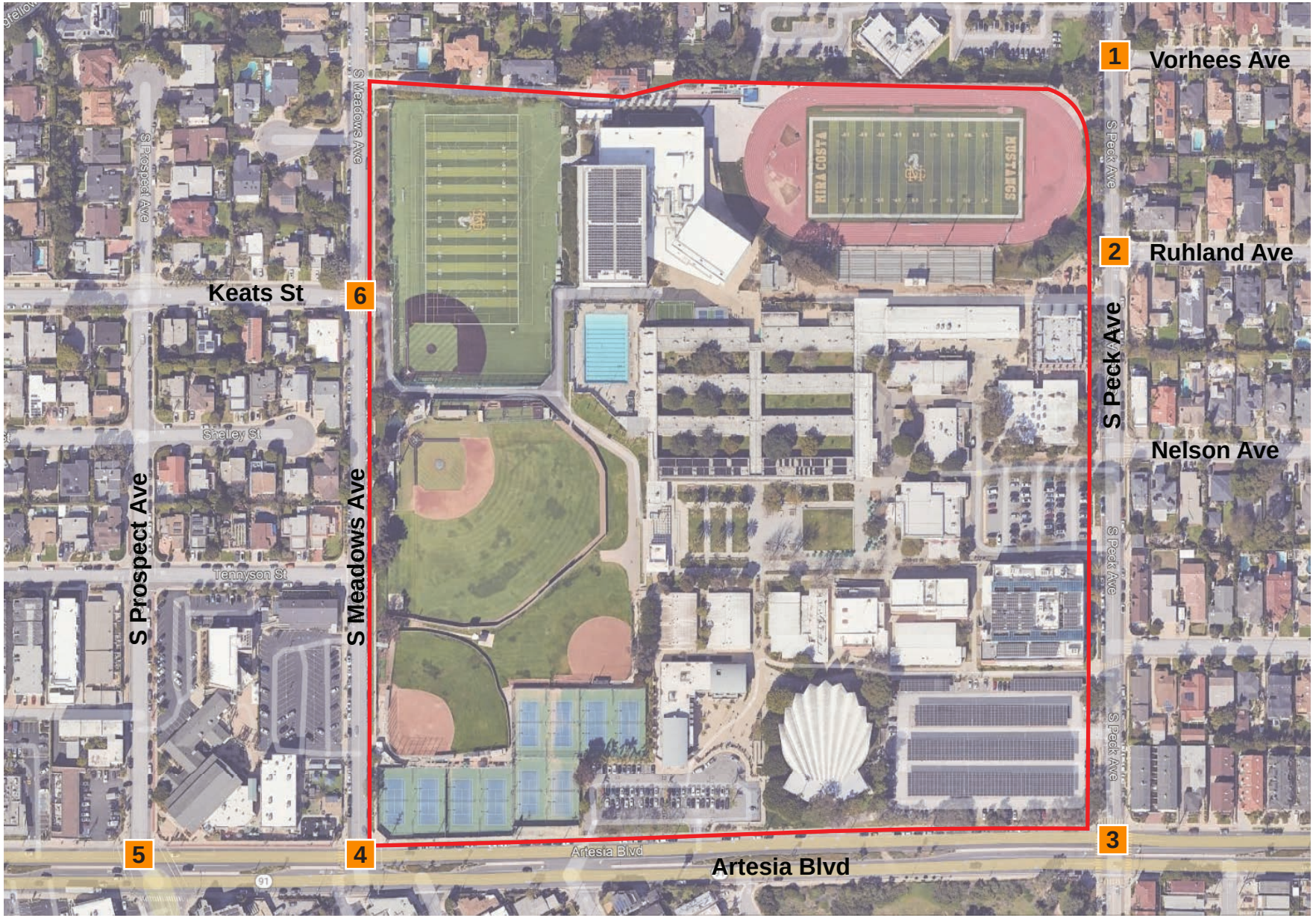
LEGEND

1) S Peck Ave and Nelson-Driveway A
2) S Peck Ave and Driveway B
3) S Peck Ave and Driveway C
4) Artesia Blvd and Driveway D
5) Artesia Blvd and Driveway E
6) Artesia Blvd and Driveway F

Project Site

Driveway Locations

Figure 1: Project Site and Driveway Locations



LEGEND

1) S Peck Ave and Vorhees Ave
2) S Peck Ave and Ruhland Ave
3) S Peck Ave and Artesia Blvd
4) S Meadows Ave and Artesia Blvd
5) S Prospect Ave and Artesia Blvd
6) S Meadows Ave and Keats St

Project Site

Intersection Locations

Figure 2: Project Site and Intersection Locations

Meadows Avenue

Meadows Avenue is a two-lane, undivided roadway that runs north-south along the western boundary of the project site. The posted speed limit is 25 miles per hour. Sidewalks are provided on both the east and west sides of Meadows Avenue. Although dedicated bike lanes are not present, shared-lane markings (sharrows) are in place, indicating that the roadway is intended for shared use with bicycles. The shoulders accommodate parallel parking for both northbound and southbound traffic. The surrounding land use is primarily low-density residential, with a church located at the southwest corner of Meadows Avenue and Artesia Boulevard.

3.3 Transit Services

Mira Costa High School is served by Torrance Transit Line 13, which operates east-west along Artesia Boulevard. There are existing bus stops in both the eastbound and westbound directions at the intersections of Artesia Boulevard and Peck Avenue and Artesia Boulevard and Meadows Avenue. Line 13 runs with a frequency between 21 and 23 minutes throughout the day in each direction.

3.4 Bicycle and Pedestrian Facilities

Sharrow markings are provided along Peck Avenue and Meadows Avenue in both the northbound and southbound directions adjacent to the campus. No existing bicycle facilities are provided along Artesia Boulevard adjacent to the campus.

Sidewalks are present along all three roadways adjacent to campus on both sides of the streets. Marked crosswalks are provided at signalized intersections and at stop sign controlled intersections along Peck Avenue and Meadows Avenue.

3.5 Existing Parking Supply

Mira Costa High School has three existing parking lots to serve staff and students. Additional parking is accommodated on-street along the north side of Artesia Boulevard adjacent to the school and along Peck Avenue and Meadows Avenue on the east and west sides of the campus. On-campus parking locations are shown in Figure 3.

The staff parking lot is accessed via a single entrance-only driveway and features a separate exit-only driveway, both located along Peck Avenue. This lot includes a one-way pick-up/drop-off loop that operates in a counterclockwise direction. The student parking lot, situated in the southeast corner of the campus, is served by one access driveway on Peck Avenue and an exit-only driveway to Artesia Boulevard. This lot also includes staff parking spaces. A third parking lot, located west of the auditorium, provides two access driveways to Artesia Boulevard. This lot also contains a small one-way pick-up/drop-off loop. Table 2 summarizes the existing parking supply in each of the off-street parking lots on campus.

Table 2 On-Site Parking Supply

Parking Location	Parking Spaces	ADA Parking Spaces
East Staff Lot	63	7
Student Lot	290	7
West Staff Lot	65	5
TOTAL	**418**	**19**



LEGEND

Project Site

Parking Lots

Figure 3: Parking Locations

4. Existing Conditions

This section presents the Existing Conditions (2025) for traffic in the project study area. Descriptions of the existing roadway network and intersection level of service analysis results for the Existing Year (2025) No Project scenario are included in this section.

4.1 Average Daily Traffic

The average daily traffic (ADT) volumes for the study area roadway segments for the Existing Condition are summarized in Table 3. Traffic count data sheets are provided in Appendix A.

Table 3 Roadway Average Daily Traffic (ADT)

Roadway	Source	Count Date	EXISTING ADT
Artesia Blvd west of S Peck Ave	AimTD LLC	06/03/2025	28,242
Artesia Blvd east of S Peck Ave	AimTD LLC	06/03/2025	25,904
S Peck Ave north of Artesia Blvd	AimTD LLC	06/03/2025	4,005
S Meadows Ave north of Artesia Blvd	AimTD LLC	06/03/2025	3,317

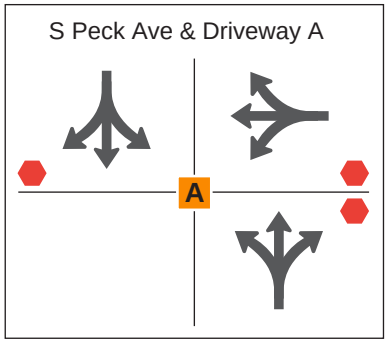
4.2 Intersection and Driveway Level of Service

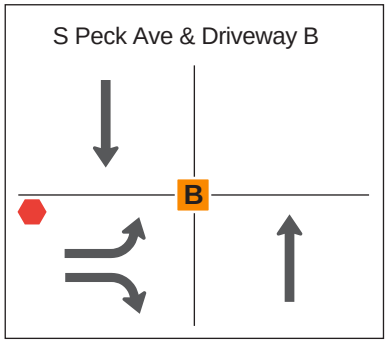
Intersection and driveway level of service (LOS) was analyzed using the methods outlined in Section 2. Table 4 summarizes the existing level of service at the study intersections. Existing driveway and study intersection geometries are shown in Figures 4 and 5. Existing Year (2025) No Project AM and PM peak hour turning movement volumes are shown in Figures 6 and 7. All study intersections and site access driveways currently operate at an acceptable level of service during the AM and PM peak hours.

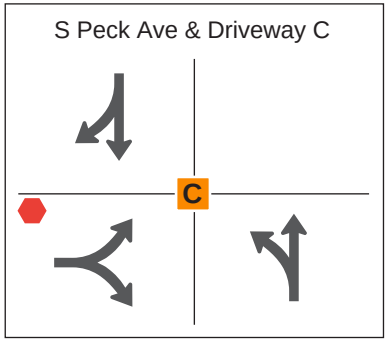
Table 4 Existing Intersection and Driveway Level of Service

Intersection/Driveway	AM Peak Hour		PM Peak Hour	
	HCM Delay (seconds)	LOS	HCM Delay (seconds)	LOS
S Peck Ave and Vorhees Ave	8.8	A	8.0	A
S Peck Ave and Ruhland Ave	8.6	A	8.0	A
S Peck Ave and Artesia Blvd	22.2	C	13.8	B
S Meadows Ave and Artesia Ave	7.5	A	9.2	A
S Meadows Ave and Keats St	8.6	A	9.0	A
S Prospect Ave and Artesia Ave	13.5	B	14.8	B
S Peck Ave and Nelson-Driveway A	9.3	A	8.2	A
S Peck Ave and Driveway B	10.1	B	9.7	A
S Peck Ave and Driveway C	13.3	B	10.1	B
Artesia Blvd and Driveway D	16.8	C	12.2	B
Artesia Blvd and Driveway E	17.1	C	12.2	B
Artesia Blvd and Driveway F	27.2	D	22.2	C



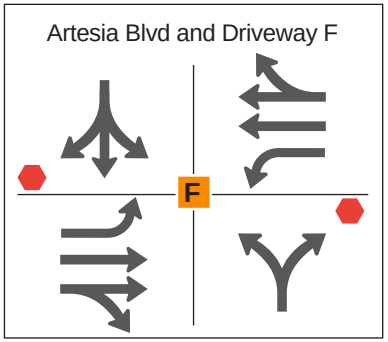


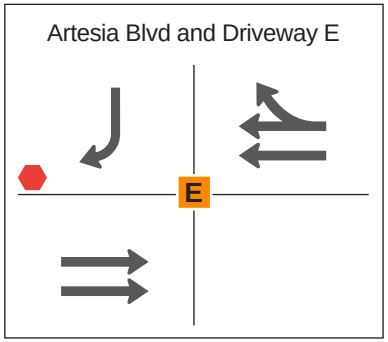




LEGEND

- Study Driveway
- Project Site
- Stop Sign





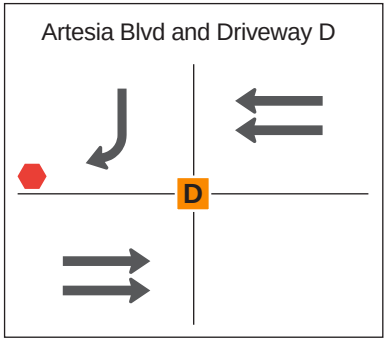
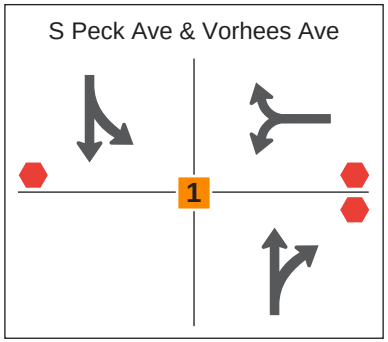
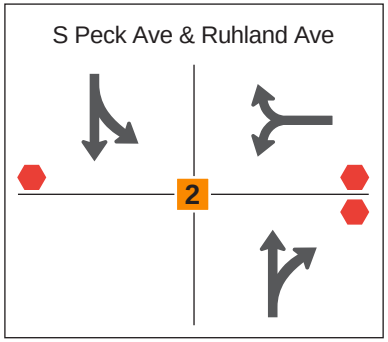
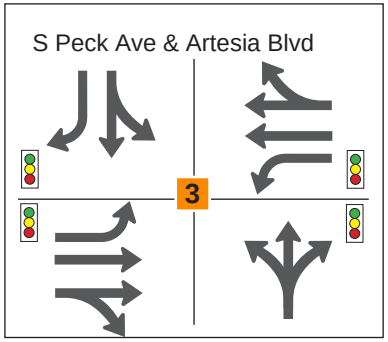


Figure 4: Existing Driveway Geometry



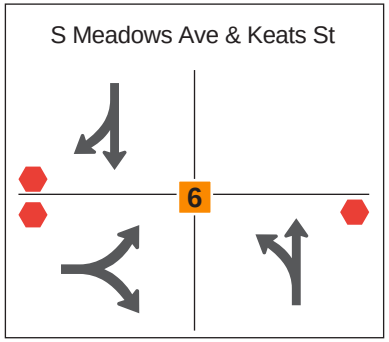


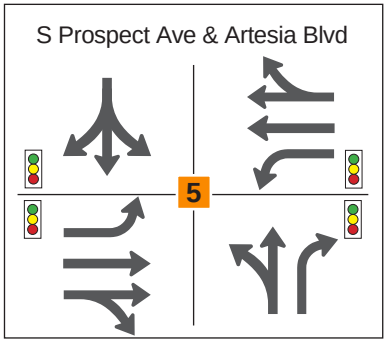




LEGEND

- Study Intersection
- Project Site
- Stop Sign
- Traffic Light





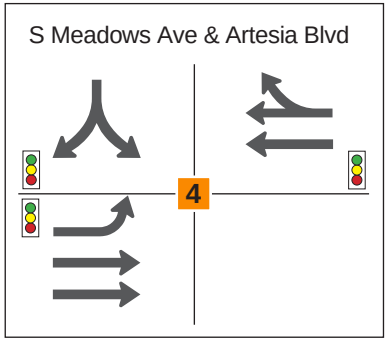
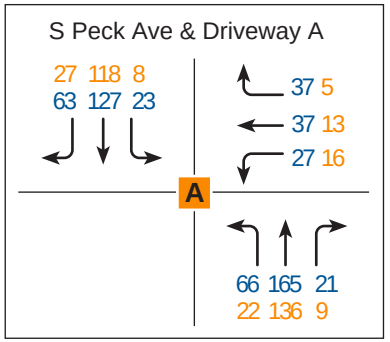
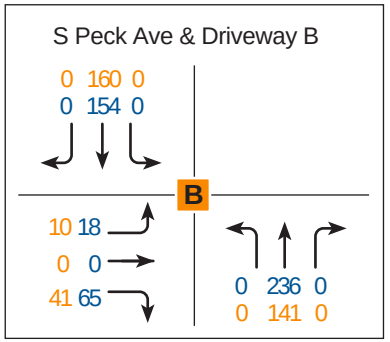
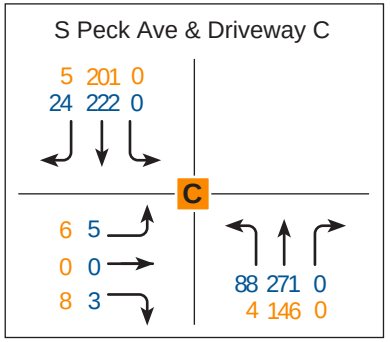


Figure 5: Existing Intersection Geometry



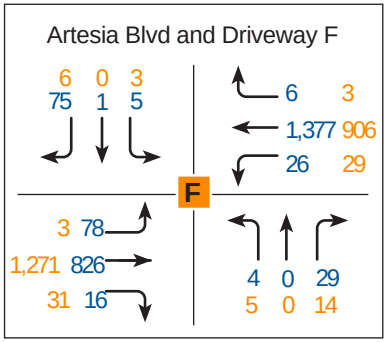


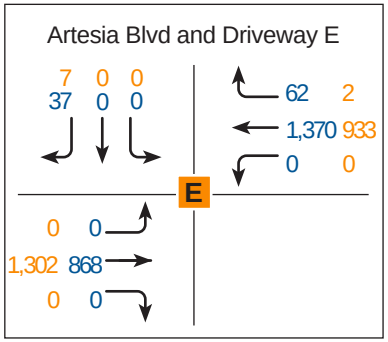




LEGEND

- Study Intersection
- AM Peak Hour Volume
- PM Peak Hour Volume
- Project Site





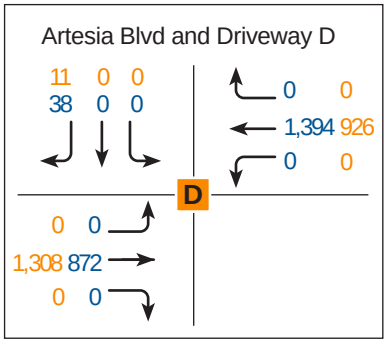
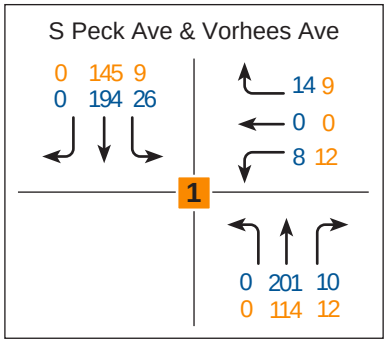
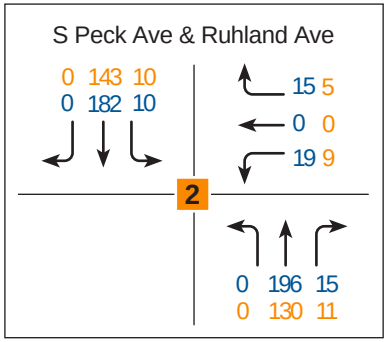
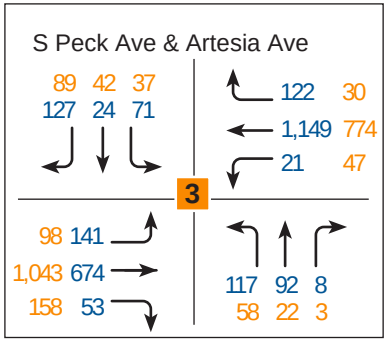


Figure 6: Existing Year (2025) Driveway No Project Volumes AM-PM



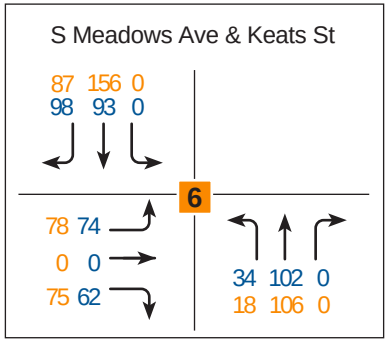


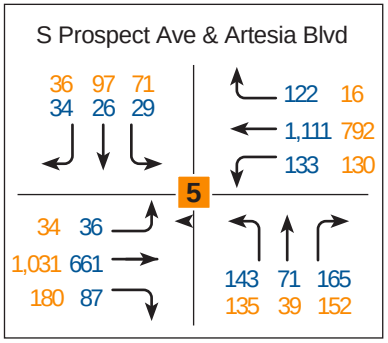




LEGEND

- Study Intersection
- AM Peak Hour Volume
- PM Peak Hour Volume
- Project Site





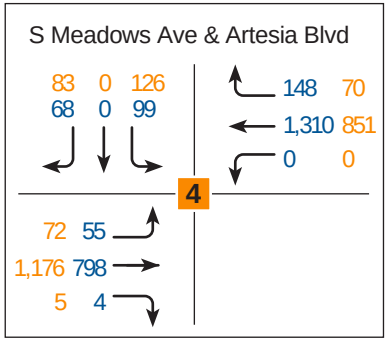


Figure 7: Existing Year (2025) Intersection No Project Volumes AM-PM

5. Opening Year (2026) No Project

This section presents the ADT and peak hour traffic operations for the Opening Year (2026) No Project scenario. No Project traffic volumes were developed by applying a 1% annual growth rate to Existing Year (2025) counts. Results for the average daily traffic and intersection level of service for the Opening Year (2026) No Project scenario are presented in this section.

5.1 Average Daily Traffic

The average daily traffic for the study area roadway segment in the Opening Year (2026) No Project scenario is presented in Table 5.

Table 5 Estimated ADT Opening Year No Project

Roadway	2026 No Project Volume
Artesia Blvd west of S Peck Ave	28,524
Artesia Blvd east of S Peck Ave	26,163
S Peck Ave north of Artesia Blvd	4,045
S Meadows Ave north of Artesia Blvd	3,350

5.2 Intersection Level of Service

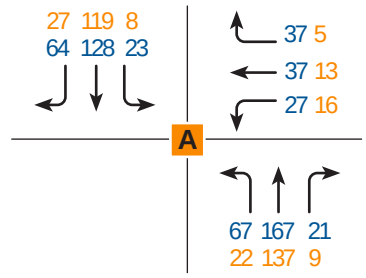
A summary of the AM and PM peak hour intersection level of service analysis results for the Opening Year (2026) No Project scenario is presented in Table 6. Opening Year (2026) No Project AM and PM peak hour turning movement volumes are shown in Figures 8 and 9. All study intersections and site access driveways are forecasted to operate at acceptable levels of service during the Opening Year No Project conditions.

Table 6 Opening Year (2026) No Project Intersection LOS

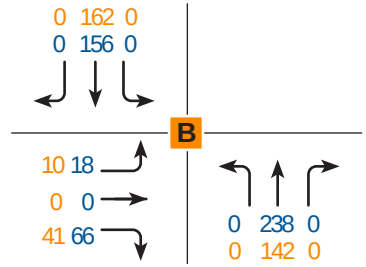
Intersection	AM Peak Hour		PM Peak Hour	
	HCM Delay (s)	LOS	HCM Delay (s)	LOS
S Peck Ave and Vorhees Ave	8.8	A	8.0	A
S Peck Ave and Ruhland Ave	8.7	A	8.0	A
S Peck Ave and Artesia Blvd	22.4	C	13.9	B
S Meadows Ave and Artesia Ave	7.5	A	9.3	A
S Meadows Ave and Keats St	8.6	A	9.1	A
S Prospect Ave and Artesia Ave	13.2	B	14.6	B
S Peck Ave and Nelson-Driveway A	9.4	A	8.2	A
S Peck Ave and Driveway B	10.1	B	9.7	A
S Peck Ave and Driveway C	13.3	B	10.1	B
Artesia Blvd and Driveway D	16.9	C	12.3	B
Artesia Blvd and Driveway E	17.3	C	12.3	B
Artesia Blvd and Driveway F	27.9	D	22.5	C



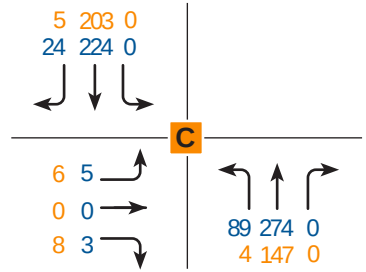
S Peck Ave & Driveway A



S Peck Ave & Driveway B



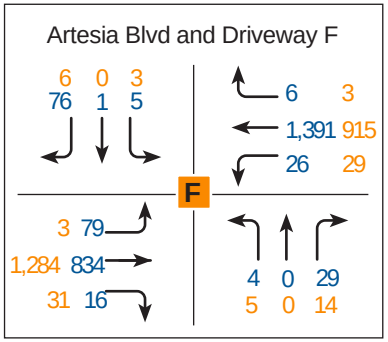
S Peck Ave & Driveway C



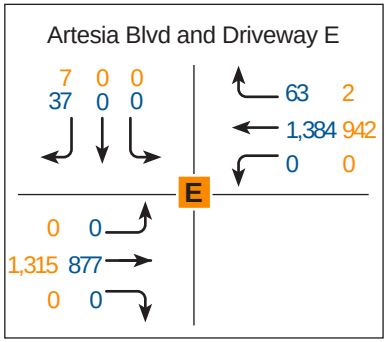
LEGEND

- Study Intersection
- AM Peak Hour Volume
- PM Peak Hour Volume
- Project Site

Artesia Blvd and Driveway F



Artesia Blvd and Driveway E



Artesia Blvd and Driveway D

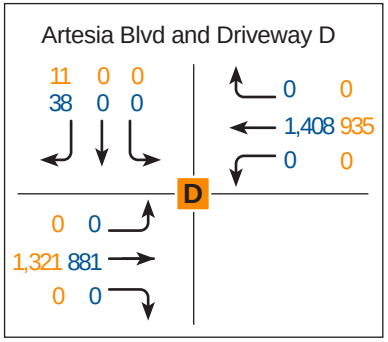
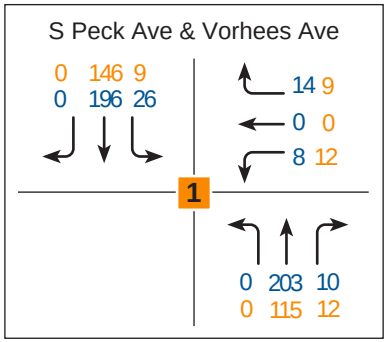
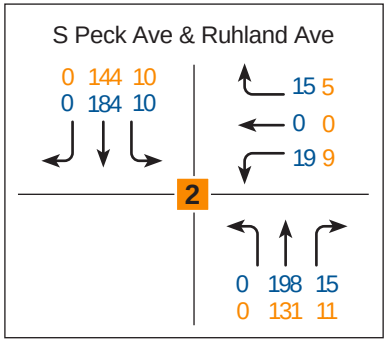
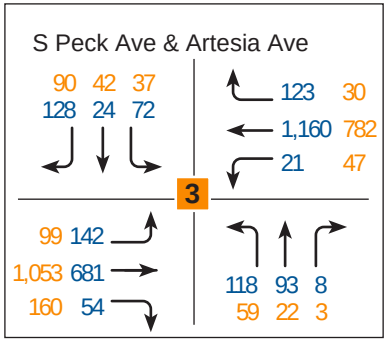


Figure 8: Opening Year (2026) Driveway No Project Volumes AM-PM



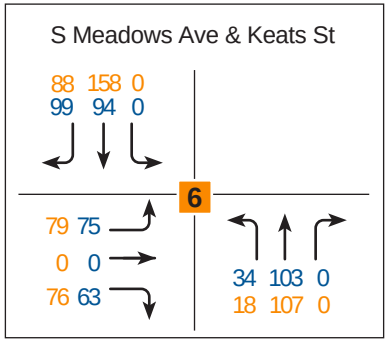


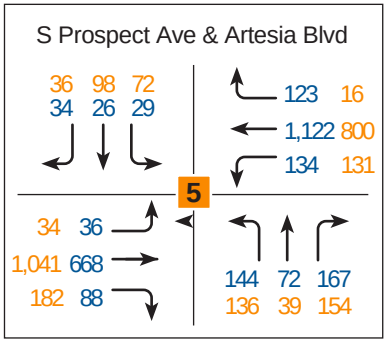




LEGEND

- Study Intersection
- AM Peak Hour Volume
- PM Peak Hour Volume
- Project Site





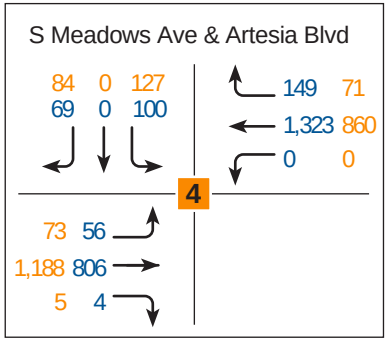


Figure 9: Opening Year (2026) Intersection No Project Volumes AM-PM

6. Project Conditions

This section of the report presents the trip generation forecasts for the project, ADT values for the 2025 Existing with Project and 2026 Opening Year with Project conditions, and LOS analysis for the study intersections and project driveways for the 2025 Existing with Project and 2026 Opening Year with Project conditions.

The VMT screening analysis is also presented, along with discussion of parking conditions on the project site, and site access and circulation for the with project condition.

6.1 Trip Generation and Distribution

Forecast trip generation for the project is estimated using rates published in the ITE Trip Generation Manual 12th Edition and information provided by MBUSD regarding the projected increase in activities and events that would occur on the high school fields with the proposed improvements. As noted earlier in the report, no changes to the overall student capacity are planned for the school with the proposed modernization projects. The only forecast change that would influence vehicle trip generation is associated with activities and sports events resulting from the additional field lighting.

MBUSD provided information on the anticipated activities and events that would occur on the West Field and the End Cap. These are the two field locations planned to see an increase in the number of events throughout the school year. Tables 7 and 8 present the list of activities planned by MBUSD on these fields, including the number of days per week, start and end times, and anticipated attendance. Events identified in italics are proposed to occur on weekends (Saturday and Sunday).

Table 7 Proposed Event Schedule with Proposed Lighting (End Cap)

Activity/Use	Number of Events	Months of the Year	Days of the Week	Start Time	End Time	Attendance
End Cap						
Soccer Practices	80	6	5	7pm	9pm	30
Soccer Games	40	6	5	7pm	9pm	40
Lacrosse Practice	40	6	5	7pm	9pm	40
Soccer Practices	80	6	5	6pm	9pm	30
Soccer Games	*40*	*6*	*2*	*6pm*	*9pm*	*40*
Lacrosse Practice	*40*	*9*	*2*	*6pm*	*9pm*	*40*
Total Proposed Events	**320**	**-**	**-**	**-**	**-**	**-**
Existing Events	***171***	**-**	**-**	**-**	**-**	**-**
Total Events	**491**	**-**	**-**	**-**	**-**	**-**

Italics: Weekend Event
Source: MBUSD 2025

Table 8 Proposed Event Schedule with Proposed Lighting (West Field)

Activity/Use	Number of Events	Months of the Year	Days of the Week	Start Time	End Time	Attendance
West Field						
Youth Football: BCS	40	6	5	7pm	9pm	40
Lacrosse: LA Select	40	6	5	7pm	9pm	40
Soccer: Sand and Surf	40	6	5	7pm	9pm	40
Youth Football: BCS	40	6	5	6pm	9pm	40
Lacrosse: LA Select	40	6	5	6pm	9pm	40
Soccer: Sand and Surf	40	6	5	6pm	9pm	40
Youth Football: BCS	*6*	*6*	*2*	*7pm*	*9pm*	*40*
Lacrosse: LA Select	*6*	*6*	*2*	*7pm*	*9pm*	*40*
Soccer: Sand and Surf	*6*	*6*	*2*	*7pm*	*9pm*	*40*
Youth Football: BCS	*6*	*6*	*2*	*6pm*	*9pm*	*40*
Lacrosse: LA Select	*6*	*6*	*2*	*6pm*	*9pm*	*40*
Soccer: Sand and Surf	*6*	*6*	*2*	*6pm*	*9pm*	*40*
Total Proposed Events	**276**	**-**	**-**	**-**	**-**	**-**
Existing Events	***318***	**-**	**-**	**-**	**-**	**-**
Total Events	**594**	**-**	**-**	**-**	**-**	**-**

Italics: Weekend Event
Source: MBUSD 2025

Based on the start times and projected days of the week when events are scheduled, only a portion of the planned events occurring on the West Field and the End Cap would generate trips during the weekday PM peak hour. These events would be those that are scheduled to occur beginning at 6pm on weekdays. This includes the following events:

- End Cap
  - Soccer Practices – 30 attendees
- West Field
  - Youth Football: BCS – 40 attendees
  - Lacrosse: LA Select – 40 attendees
  - Soccer: Sand and Surf – 40 attendees

Weekday events scheduled to occur between 7pm and 9pm would generate trips outside of the PM peak hour, which was observed to occur beginning at 4:15pm on Artesia Boulevard and Meadows Avenue and at 5:00pm on Peck Avenue. Due to the later start times, these events are not considered in the trip generation forecasts.

For the events occurring between 6pm and 9pm, all events do not occur simultaneously. The three West Field activities (lacrosse, football, and soccer) all use the same field and their events would be scheduled on different days. Use of the West Field and the End Cap simultaneously is possible. To estimate trip generation, this analysis assumes simultaneous use of the West Field and End Cap by an event with 40 attendees on the West Field and 30 attendees on the End Cap. The West Field and the End Cap are assumed to be separate single fields for the purposes of trip generation based on the physical space available in each location and the number of attendees.

The Soccer Field land use presented in the ITE Trip Generation Manual 12th Edition was used to develop trip generation forecasts for the AM and PM peak hours and daily period. Table 9 presents the trip generation forecasts.

Table 9 Project Trip Generation

Land Use and Time Period	Trip Generation Rate	Distribution		Trips		Total
		Inbound	Outbound	Inbound	Outbound	
Soccer Field – AM Peak Hour	0.99 trips / field	61%	39%	1	1	2
Soccer Field – PM Peak Hour	0.16 trips / field	66%	34%	22	11	33
Soccer Field – Daily	71.33 trips / field	50%	50%	71	72	143

Figure 10 shows the forecast percentage distribution of project trips through the study intersections and project driveways. Given the location of the West Field and End Cap and the typical user group as students, a majority of vehicles are assumed to begin their trip either from Meadows Avenue or the student parking lot at the southeast corner of the campus.

6.2 With Project ADT Volumes

Table 10 presents ADT volumes for each roadway segment in each analysis scenario.

Table 10 With Project ADT Volumes

Roadway	2025 No Project	2025 With Project	2026 No Project	2026 With Project
Artesia Blvd west of S Peck Ave	28,242	28,299	28,524	28,581
Artesia Blvd east of S Peck Ave	25,904	25,961	26,163	26,220
S Peck Ave north of Artesia Blvd	4,005	4,041	4,045	4,081
S Meadows Ave north of Artesia Blvd	3,317	3,396	3,350	3,429

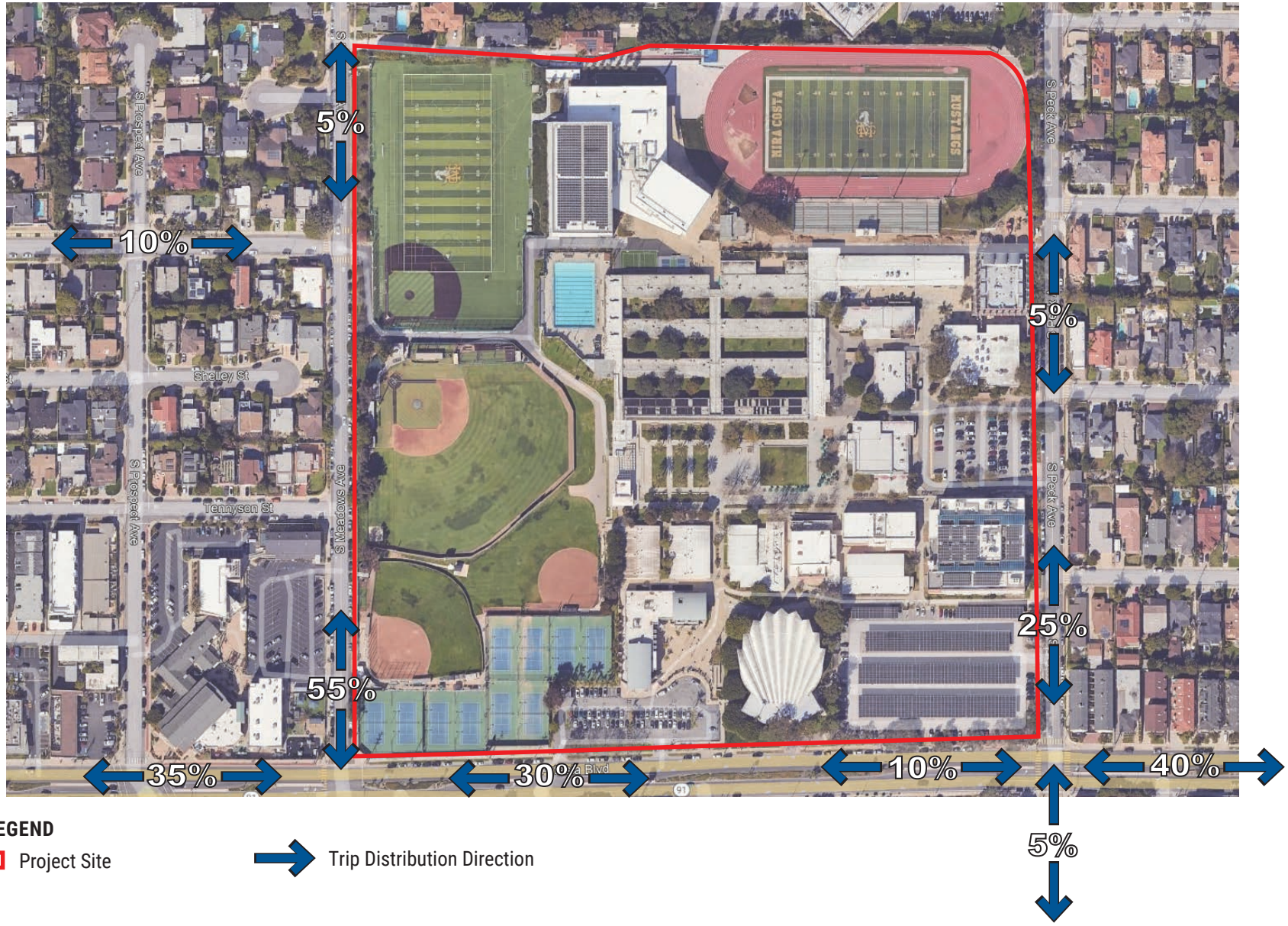


Figure 10: Estimated Trip Distribution

6.3 Existing Year (2025) with Project Intersection and Driveway Analysis

A summary of the AM and PM peak hour intersection level of service analysis results for the Existing Year (2025) with Project scenario is presented in Table 11. Existing Year (2025) with Project AM and PM peak hour turning movement volumes are shown in Figures 11 and 12.

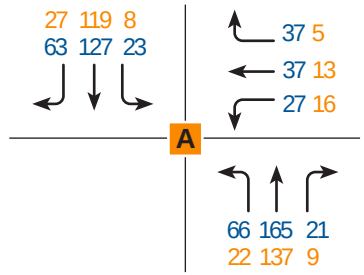
Table 11 Existing Year (2025) With Project Intersection LOS

Intersection	AM Peak Hour				PM Peak Hour			
	2025 Existing No Project		2025 Existing W/ Project		2025 Existing No Project		2025 Existing W/ Project	
	HCM Delay (s)	LOS	HCM Delay (s)	LOS	HCM Delay (s)	LOS	HCM Delay (s)	LOS
S Peck Ave and Vorhees Ave	8.8	A	8.8	A	8.0	A	8.0	A
S Peck Ave and Ruhland Ave	8.6	A	8.6	A	8.0	A	8.0	A
S Peck Ave and Artesia Blvd	22.2	C	22.2	C	13.8	B	13.9	B
S Meadows Ave and Artesia Ave	7.5	A	7.5	A	9.2	A	9.6	A
S Meadows Ave and Keats St	8.6	A	8.6	A	9.0	A	9.0	A
S Prospect Ave and Artesia Ave	13.5	B	13.2	B	14.8	B	14.5	B
S Peck Ave and Nelson-Driveway A	9.3	A	9.3	A	8.2	A	8.2	A
S Peck Ave and Driveway B	10.1	B	10.1	B	9.7	A	9.7	A
S Peck Ave and Driveway C	13.3	B	13.3	B	10.1	B	10.1	B
Artesia Blvd and Driveway D	16.8	C	16.8	C	12.2	B	12.3	B
Artesia Blvd and Driveway E	17.1	C	17.1	C	12.2	B	12.3	B
Artesia Blvd and Driveway F	27.2	D	27.2	D	22.2	C	22.3	C

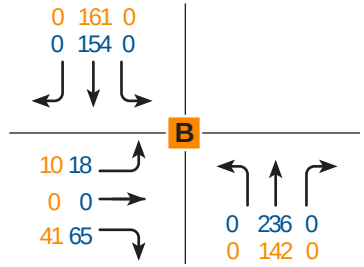
The project is not forecasted to generate significant changes to delay or LOS at any of the study intersections or site access driveways. No impacts are forecasted to occur in the Existing Plus Project condition.



S Peck Ave & Driveway A



S Peck Ave & Driveway B



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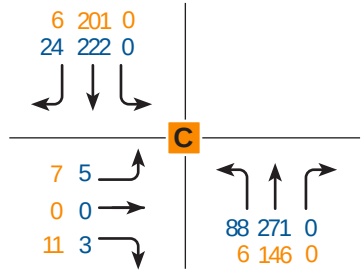
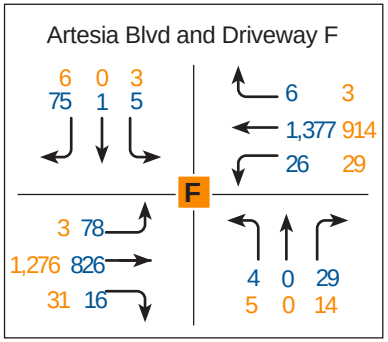


LEGEND

- Study Intersection
- AM Peak Hour Volume
- PM Peak Hour Volume
- Project Site

Artesia Blvd and Driveway F



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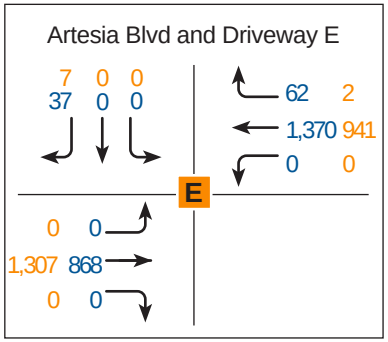

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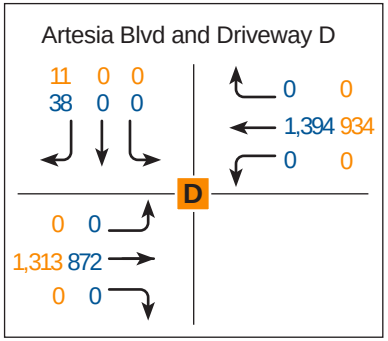
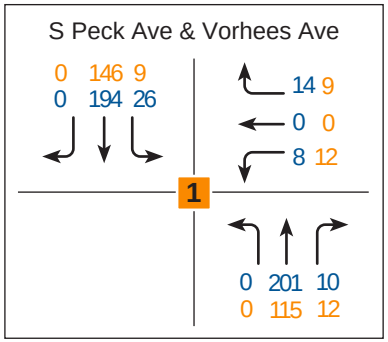
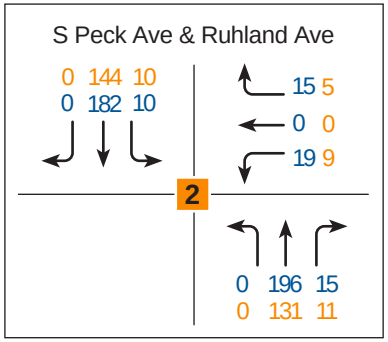
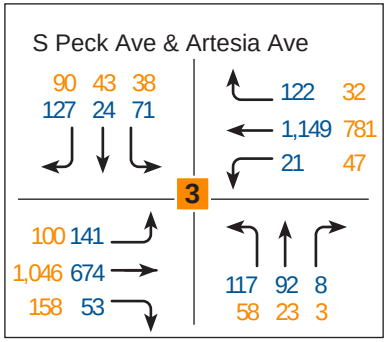


Figure 11: Existing Year (2025) Driveway With Project Volumes AM-PM



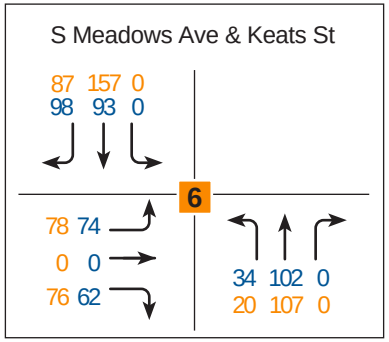


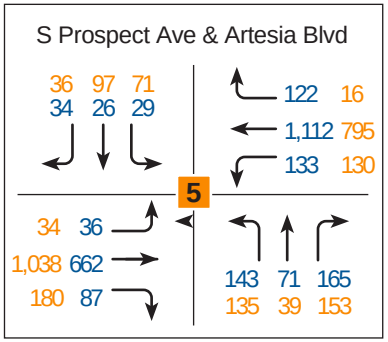




LEGEND

- Study Intersection
- AM Peak Hour Volume
- PM Peak Hour Volume
- Project Site





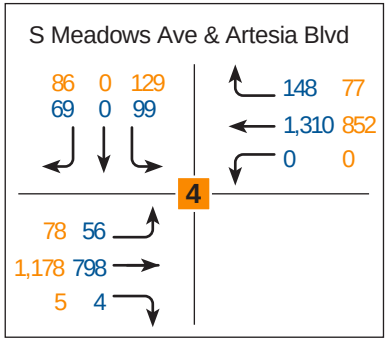


Figure 12: Existing Year (2025) Intersection With Project Volumes AM-PM

6.4 Opening Year (2026) with Project Intersection and Driveway Analysis

A summary of the AM and PM peak hour intersection level of service analysis results for the Opening Year (2026) with Project scenario is presented in Table 12. Opening Year (2026) with Project PM peak hour turning movement volumes are shown in Figures 13 and 14.

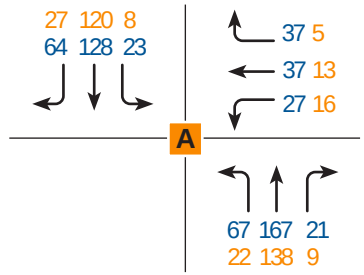
Table 12 Opening Year (2026) With Project Intersection LOS

Intersection	AM Peak Hour				PM Peak Hour			
	2026 Opening Year No Project		2026 Opening Year W/Project		2026 Opening Year No Project		2026 Opening Year W/Project	
	HCM Delay (s)	LOS	HCM Delay (s)	LOS	HCM Delay (s)	LOS	HCM Delay (s)	LOS
S Peck Ave and Vorhees Ave	8.8	A	8.8	A	8.0	A	8.0	A
S Peck Ave and Ruhland Ave	8.7	A	8.7	A	8.0	A	8.0	A
S Peck Ave and Artesia Blvd	22.4	C	22.4	C	13.9	B	14.0	B
S Meadows Ave and Artesia Ave	7.5	A	7.6	A	9.3	A	9.7	A
S Meadows Ave and Keats St	8.6	A	8.6	A	9.1	A	9.1	A
S Prospect Ave and Artesia Ave	13.2	B	13.2	B	14.6	B	14.6	B
S Peck Ave and Nelson-Driveway A	9.4	A	9.4	A	8.2	A	8.2	A
S Peck Ave and Driveway B	10.1	B	10.1	B	9.7	A	9.7	A
S Peck Ave and Driveway C	13.3	B	13.3	B	10.1	B	10.2	B
Artesia Blvd and Driveway D	16.9	C	16.9	C	12.3	B	12.3	B
Artesia Blvd and Driveway E	17.3	C	17.3	C	12.3	B	12.3	B
Artesia Blvd and Driveway F	27.9	D	27.9	D	22.5	C	22.6	C

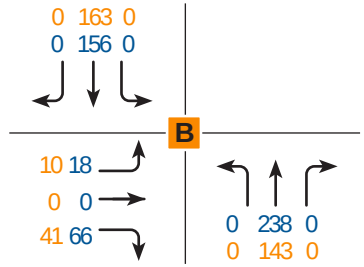
The project is not forecasted to generate significant changes to delay or LOS at any of the study intersections or site access driveways. No impacts are forecasted to occur in the Opening Year Plus Project condition.



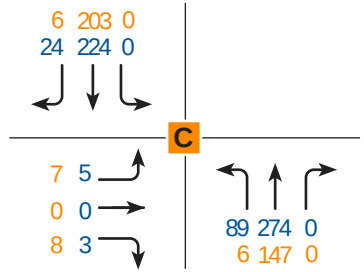
S Peck Ave & Driveway A



S Peck Ave & Driveway B



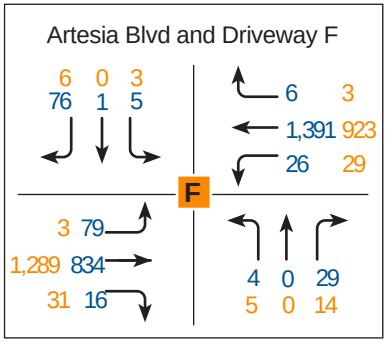
S Peck Ave & Driveway C



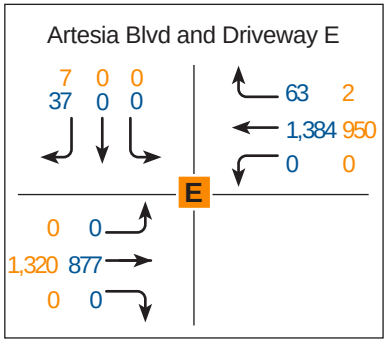
LEGEND

- Study Intersection
- AM Peak Hour Volume
- PM Peak Hour Volume
- Project Site

Artesia Blvd and Driveway F



Artesia Blvd and Driveway E



Artesia Blvd and Driveway D

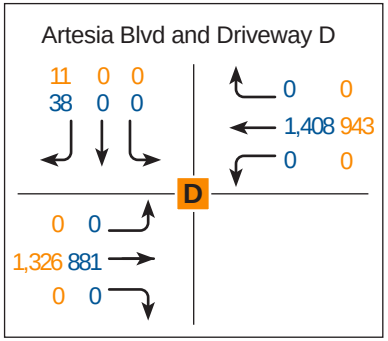
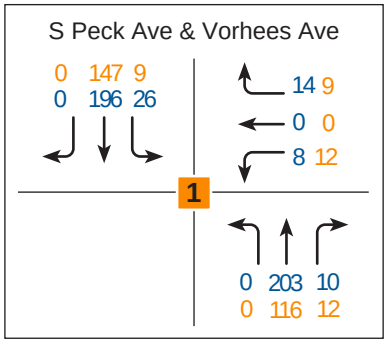
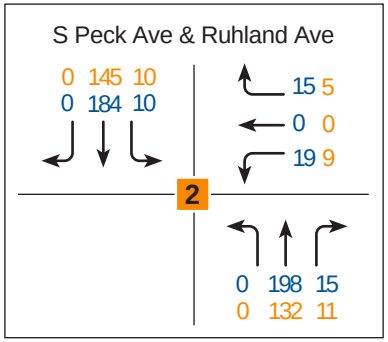
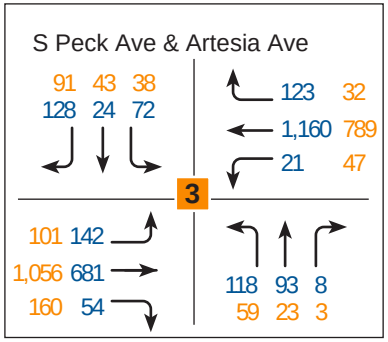


Figure 13: Opening Year (2026) Driveway With Project Volumes AM-PM



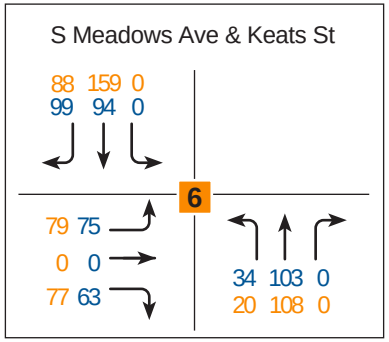


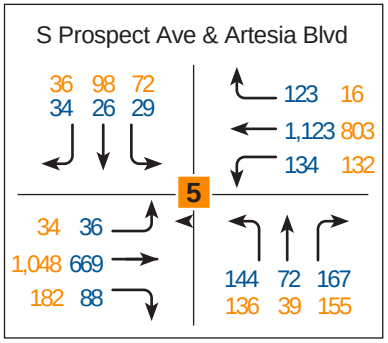




LEGEND

- Study Intersection
- AM Peak Hour Volume
- PM Peak Hour Volume
- Project Site





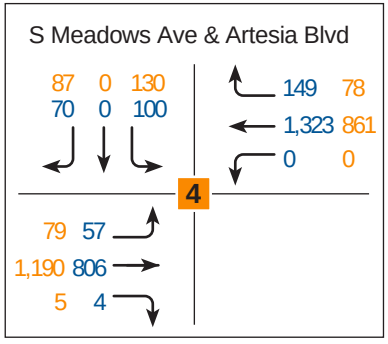


Figure 14: Opening Year (2026) Intersection With Project Volumes AM-PM

6.5 Parking Analysis

Parking occupancy counts were collected at Mira Costa High School on June 3, 2025. Counts were completed between 8am and 5pm on this date to capture peak school parking times and after school activities. Parking occupancy was collected for all three on-campus off-street parking lots shown in Figure 2. Additionally, on-street parking occupancy counts were completed along both sides of Peck Avenue between Voorhees Avenue and Artesia Boulevard, both sides of Meadows Avenue between Keats Street and Artesia Boulevard, and along the north side of Artesia Boulevard between Meadows Avenue and Peck Avenue.

Existing Parking Conditions

Table 13 presents the existing parking occupancy data for each location on an hourly basis. Table 14 presents the occupancy by location for each time period. Detailed parking count tables are included in the Appendix on this report and include a breakdown of demand by parking stall type (student, staff, disabled, etc.) by location and by hour.

Table 13 Existing Year (2025) Parking Occupancy Data

Parking Location	Capacity	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Meadows Ave (Keats to Artesia)	**79**	78	79	79	79	78	59	54	35	41	43
Peck Ave (Voorhees to Artesia)	**76**	59	62	61	64	60	38	26	19	16	9
Artesia Blvd (Meadows to Peck)	**43**	39	42	41	43	41	30	28	12	2	2
East Staff Lot	**70**	55	56	58	58	60	50	53	63	28	27
Student Lot	**297**	238	266	263	268	244	232	147	93	39	27
West Staff Lot	**70**	36	59	62	61	62	59	54	44	20	15

Note: On-street parking capacities are approximate and estimated using the linear length of curb space for each segment

Table 14 Existing Year (2025) Parking Occupancy Percentage

Parking Location	Capacity	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Meadows Ave (Keats to Artesia)	**79**	99%	100%	100%	100%	99%	75%	63%	44%	52%	54%
Peck Ave (Voorhees to Artesia)	**76**	78%	82%	80%	84%	79%	50%	34%	25%	21%	12%
Artesia Blvd (Meadows to Peck)	**43**	91%	98%	95%	100%	95%	70%	65%	28%	5%	5%
East Staff Lot	**70**	79%	80%	83%	83%	86%	71%	76%	90%	40%	39%
Student Lot	**297**	80%	90%	89%	90%	82%	78%	49%	31%	13%	9%
West Staff Lot	**70**	51%	84%	89%	87%	89%	84%	77%	63%	29%	21%

Note: On-street parking capacities are approximate and estimated using the linear length of curb space for each segment

Parking data collected for the project site shows a peak parking demand time period of 9am to 11am, coinciding with the morning school time period. Staff parking demand remains consistent throughout the typical school day until 3pm. Student demand begins to drop at 1pm and continues to drop later into the afternoon. The early (1pm) beginning of the drop in student parking demand (both on campus and on-street) is likely due to the count being conducted during a week with Senior finals and these students may not have been required to stay on campus for a full day. However, parking demand levels in the 9am to 11am period provide a good understanding of parking utilization on campus and on adjacent streets during the typical school day.

Parking Demand Forecasts

The ITE Parking Generation Manual, 6th Edition was used to develop parking generation estimates for proposed activities and events on the West Field and the End Cap. Average parking demand is estimated at 33 vehicles for two fields, with the 85th percentile demand estimated at 38 vehicles. Sufficient parking capacity to meet this level of parking demand is expected to be present along Meadows Avenue and in the off-street parking lots located on campus. At 5pm, Meadows Avenue had 36 available parking spaces, while the student parking lot had 270 available parking spaces. Even if additional parking demand were present as part of a typical school day, no impacts to the existing parking supply for the school are anticipated from the proposed project since the proposed new activities and events would occur from 6pm to 9pm, when overall parking demand at the school is significantly below capacity.

The proposed modernization portion of the project would not create any changes to on-site parking supply or locations. The modernization project is also not anticipated to increase student or staff parking demand since student capacity at the school would remain unchanged. The modernization project includes the creation of a formalized e-bike parking area. This improvement is intended to encourage more students to commute to campus using e-bikes and to better accommodate existing e-bike usage. This improvement is more likely to reduce vehicle parking demand either on campus or on streets adjacent to campus. No impacts to existing parking supply are expected to occur due to the proposed building modernization improvements.

Proposed Project Design Features for Parking Management

As part of the project, the District is proposing to implement a variety of parking management strategies that would encourage use of existing on campus parking lots. The proposed strategies include:

- Parking Lot Wayfinding Signage: The District proposes adding wayfinding signage directing visitors to existing off-street parking lots located on campus is proposed along Artesia Boulevard, Peck Avenue, and Meadows Avenue. The proposed signage would be placed in advance of the school campus along each roadway and would direct visitors to the existing on campus parking lots.

- Additional On Campus Wayfinding Signage: The District proposes adding additional pedestrian wayfinding signage on campus directly visitors from the Administration lot to the athletic fields. This signage already exists for other on campus parking lots.

- Pre-event Digital Maps: The District will develop and provide a downloadable map on the Mira Costa High School website highlighting the location of on campus parking lots and vehicle access points to each lot.

- Off-Site Parking Agreements: The District will explore the potential for establishing agreements with nearby property owners to utilize off-street parking resources when nearby

business and institutional uses are not operating. This strategy would help increase the amount of off-street parking available.

The District will coordinate with the City of Manhattan Beach regarding the installation of parking wayfinding signage that would be located within city right-of-way. The District will also endeavor to engage with the city to discuss modifications to city-administered on-street parking regulations in the vicinity of the campus to be coordinated with the on-campus parking strategies identified in this report.

6.6 VMT Analysis

Section 3.11 of the City of Manhattan Beach Transportation Analysis Guidelines describes the screening criteria adopted by the city to determine if the assessment of VMT is required for a proposed project.

The first criterion is daily project trip generation for non-retail projects. The city established 110 daily vehicle trips as a threshold for determining the need for VMT analysis, Project generating less than 110 daily vehicle trips would be screened out of being required to conduct a VMT assessment. As shown in Table 9, the proposed field projects at Mira Costa High School are forecast to generate 143 daily vehicle trips. Therefore, the project is not eligible to be screened out under this criterion.

The second criterion is proximity to a major transit stop. Projects located within ½ mile of major transit stop can be screened out from further VMT analysis. While transit service is provided to the school via Torance Transit bus service, the stops located adjacent to campus or within ½ mile are not considered to be major transit stops. Therefore, the project is not eligible to be screened out under this criterion.

The proposed project does not fit into the standard land use types described in the city's Transportation Analysis Guidelines (office, residential, retail) and would be considered a unique land use by the guidelines. In this case, the guidelines permit the application of a reasonable methodology and approach to VMT screening or analysis as part of the transportation analysis report.

The State of California CEQA guidelines allow for projects considered to be "locally serving" and consistent with the local agency's General Plan and the Regional Transportation Plan/Sustainable Communities Plan (RTP/SCS) to also be screened out from analysis for potential VMT impacts. Schools and parks are commonly considered to be locally-serving uses, as trips to and from these land uses are generated in nearby neighborhoods by local residents. In many cases, the VMT generated by schools and parks is captured in VMT estimates generated for surrounding residential land uses.

The proposed use for the project would be an increase in locally-serving sports activities and practices. These activities would draw trips from local residents in Manhattan Beach and surrounding South Bay communities. The proposed activities that would be scheduled at Mira Costa High School under the proposed project currently occur at alternative locations elsewhere in Manhattan Beach and South Bay communities. Given this anticipated condition, the proposed project can be screened out from further VMT analysis due to its locally-serving nature and the condition where the project will relocate existing trips within the same general area, rather than generate entirely new trips. Under these assumptions, the project is not anticipated to generate a significant impact for VMT.

6.7 Site Access

Several topics related to site access for vehicles, pedestrians, and bicyclists are discussed in this section.

Local Neighborhood Traffic Management

The proposed project would not generate a significant number of new vehicle trips during the AM and PM weekday peak hours. Further, the project would not result in significant changes to the number of vehicle trips on nearby local or arterial roadways. No significant traffic impacts to local neighborhood streets are expected.

On-Site Circulation

On-site vehicle circulation is provided in the three existing on campus parking lots. No changes to on-site circulation areas are proposed as part of the project. With no increase in student capacity occurring as part of the project, no impacts to on-site circulation are anticipated. The field lighting improvements and resulting increases in sports activities between 6pm and 9pm may increase on-site vehicle travel. With these events occurring outside of the normal school day, no impacts to on-site circulation are anticipated.

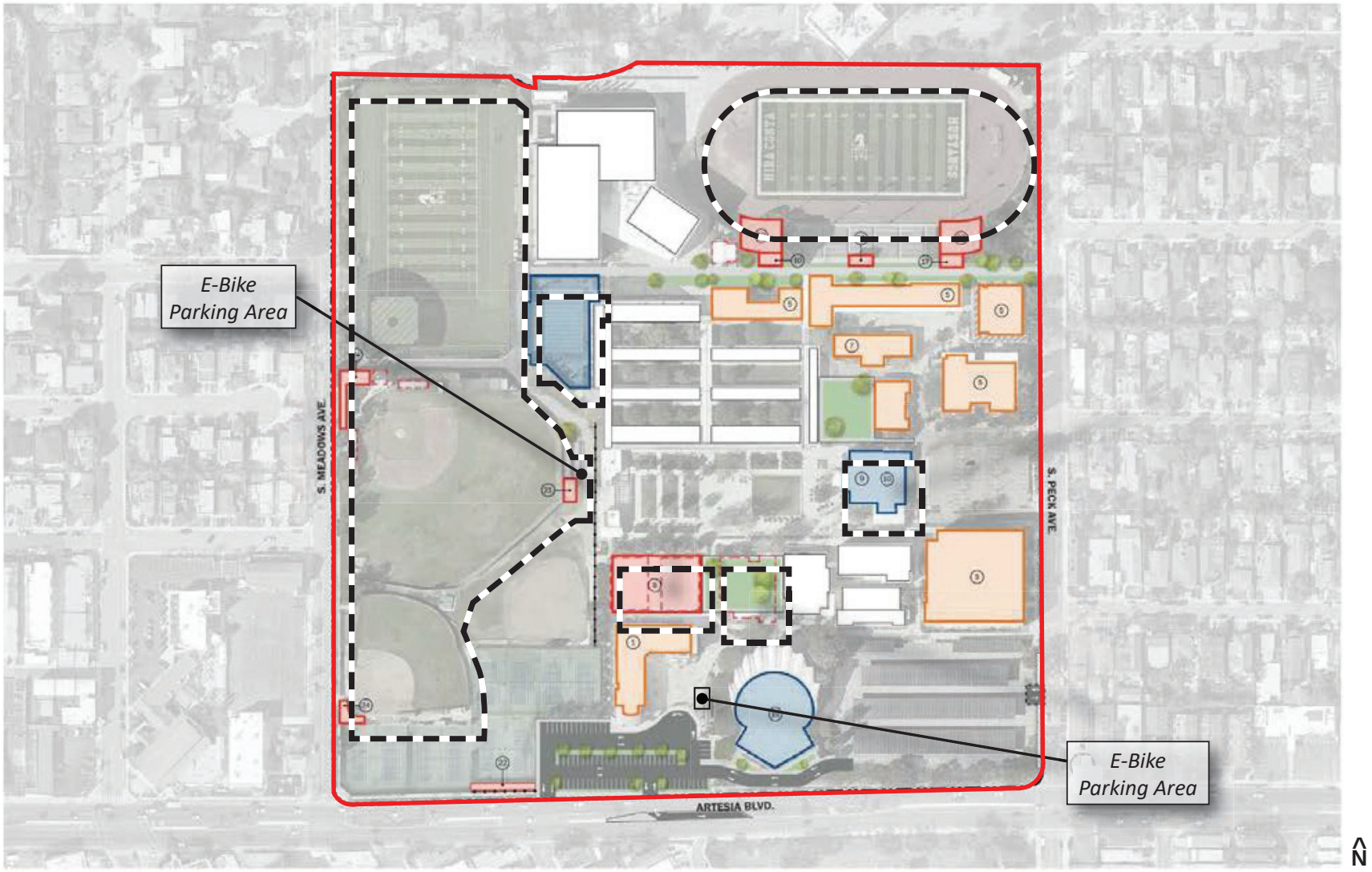
Pedestrian and Bicycle Facilities

The proposed project would enhance bicycle access to campus through the construction of a new dedicated e-bike parking facility. The primary area for e-bike parking would be located to the east of the existing baseball/softball field, and west of the existing fire lane, and would accommodate parking for 384 E-Bikes. In addition, a smaller space located in the entry courtyard, near the Administration Building and to the west of the Auditorium, would accommodate an additional 38 E-Bikes. By providing enhanced e-bike parking locations, the proposed project may encourage more students to commute to campus by bicycle, providing a benefit in terms of potential reductions to VMT and vehicle parking demand. Figure 15 shows the proposed locations of the new on campus e-bike parking facilities.

The proposed project does not include any changes or improvements to pedestrian facilities on campus or along roadways located adjacent to campus. No impacts to pedestrian circulation are anticipated.

Pick-up/Drop-off Activities

Student pick-up and drop-off lanes are provided in the West Staff Parking Lot and the East Staff Parking lot in designated areas. No changes to these pick-up/drop-off areas are proposed as part of the project. With no increase to student capacity occurring as part of the project, no impacts to pick-up/drop-off areas are anticipated. The field lighting improvements and resulting increases in sports activities between 6pm and 9pm may increase pick-up/drop-off activities. With these events occurring outside of the normal school day, no impacts to pick-up/drop-off areas are anticipated.



LEGEND

- Project Site
- E-Bike Parking Area

Figure 15: E-Bike Parking Locations

7. Conclusion

Based on the results of the transportation impact analysis, the proposed athletic field lighting project at Mira Costa High School would not significantly impact traffic operations at any of the study intersections or site access driveways. All study intersections and site access driveways are forecast to operate at an acceptable level of service under both Existing Year (2025) and Opening Year (2026) with Project scenarios. No traffic mitigation measures are necessary.

There is ample on-site and street parking to accommodate the parking demand generated by the athletic fields in the evening hours. No changes to parking supply or parking regulations are recommended.

References

City of Manhattan Beach. (2020, November 4). *Transportation Impact Analysis Guidelines.*

State of California Governor's Office of Planning and Research. (2018, December). *Technical Advisory On Evaluating Transportation Impacts In CEQA*. Retrieved from opr.ca.gov: https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

Appendix A—Turning Movement & Roadway Segment Counts

Tuesday, June 03, 2025 CITY: Mira Costa PROJECT: SC5432

ADT1 Artesia Blvd west of S Peck Ave. **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	EB		WB			PM Period	EB		WB		
0:00	18		9			12:00	230		222		
0:15	17		16			12:15	215		203		
0:30	23		9			12:30	224		201		
0:45	14	72	10	44	116	12:45	222	891	253	879	1770
1:00	12		6			13:00	272		262		
1:15	6		9			13:15	226		222		
1:30	15		6			13:30	217		204		
1:45	12	45	6	27	72	13:45	237	952	174	862	1814
2:00	8		6			14:00	234		214		
2:15	11		3			14:15	227		244		
2:30	4		3			14:30	268		268		
2:45	13	36	6	18	54	14:45	268	997	208	934	1931
3:00	6		1			15:00	271		237		
3:15	5		5			15:15	302		274		
3:30	2		3			15:30	317		212		
3:45	8	21	11	20	41	15:45	281	1171	246	969	2140
4:00	12		6			16:00	297		228		
4:15	7		8			16:15	345		241		
4:30	12		18			16:30	325		244		
4:45	13	44	53	85	129	16:45	323	1290	218	931	2221
5:00	20		45			17:00	311		223		
5:15	33		52			17:15	313		214		
5:30	37		49			17:30	307		200		
5:45	48	138	84	230	368	17:45	333	1264	228	865	2129
6:00	49		92			18:00	315		208		
6:15	72		112			18:15	261		215		
6:30	69		164			18:30	250		184		
6:45	91	281	204	572	853	18:45	227	1053	174	781	1834
7:00	111		201			19:00	181		162		
7:15	173		349			19:15	187		174		
7:30	120		307			19:30	206		150		
7:45	160	564	355	1212	1776	19:45	162	736	152	638	1374
8:00	215		344			20:00	185		114		
8:15	237		345			20:15	152		110		
8:30	213		340			20:30	143		111		
8:45	207	872	368	1397	2269	20:45	129	609	119	454	1063
9:00	153		266			21:00	145		100		
9:15	185		274			21:15	130		72		
9:30	149		239			21:30	124		72		
9:45	154	641	267	1046	1687	21:45	97	496	49	293	789
10:00	164		188			22:00	106		54		
10:15	157		203			22:15	72		39		
10:30	160		224			22:30	63		31		
10:45	182	663	223	838	1501	22:45	34	275	28	152	427
11:00	169		180			23:00	53		20		
11:15	208		205			23:15	43		17		
11:30	193		214			23:30	34		15		
11:45	226	796	257	856	1652	23:45	30	160	20	72	232
Total Vol.		4173		6345	**10518**			9894		7830	**17724**

	Daily Totals EB	WB	**Combined**
	14067	14175	**28242**

	AM			**PM**		
Split %	39.7%	60.3%	**37.2%**	55.8%	44.2%	**62.8%**
Peak Hour	11:45	8:00	**8:00**	16:15	14:30	**16:15**
Volume	895	1397	**2269**	1304	987	**2230**
P.H.F.	0.97	0.95	**0.97**	0.94	0.90	**0.95**

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Tuesday, June 03, 2025 CITY: Mira Costa PROJECT: SC5432

ADT2 Artesia Blvd east of S Peck Ave. **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	EB		WB			PM Period	EB		WB		
0:00	20		9			12:00	224		200		
0:15	15		16			12:15	200		183		
0:30	22		9			12:30	207		196		
0:45	13	70	12	46	116	12:45	201	832	239	818	1650
1:00	13		6			13:00	264		206		
1:15	6		9			13:15	212		209		
1:30	15		7			13:30	204		186		
1:45	11	45	6	28	73	13:45	222	902	175	776	1678
2:00	8		6			14:00	203		201		
2:15	11		4			14:15	199		243		
2:30	4		3			14:30	254		222		
2:45	12	35	7	20	55	14:45	240	896	204	870	1766
3:00	6		1			15:00	265		216		
3:15	5		5			15:15	294		232		
3:30	2		3			15:30	288		188		
3:45	8	21	10	19	40	15:45	268	1115	216	852	1967
4:00	12		6			16:00	275		177		
4:15	6		8			16:15	307		225		
4:30	12		18			16:30	254		224		
4:45	14	44	53	85	129	16:45	267	1103	199	825	1928
5:00	21		41			17:00	263		211		
5:15	34		48			17:15	284		197		
5:30	37		48			17:30	260		188		
5:45	46	138	79	216	354	17:45	266	1073	213	809	1882
6:00	46		91			18:00	279		190		
6:15	68		113			18:15	234		205		
6:30	64		156			18:30	220		160		
6:45	83	261	202	562	823	18:45	180	913	168	723	1636
7:00	85		189			19:00	168		159		
7:15	134		330			19:15	173		168		
7:30	99		268			19:30	200		141		
7:45	141	459	315	1102	1561	19:45	149	690	137	605	1295
8:00	177		320			20:00	177		110		
8:15	189		347			20:15	143		102		
8:30	195		285			20:30	133		117		
8:45	194	755	342	1294	2049	20:45	126	579	98	427	1006
9:00	140		244			21:00	135		96		
9:15	170		257			21:15	128		78		
9:30	140		215			21:30	114		67		
9:45	138	588	244	960	1548	21:45	91	468	53	294	762
10:00	157		185			22:00	102		55		
10:15	147		188			22:15	70		39		
10:30	147		214			22:30	62		33		
10:45	163	614	204	791	1405	22:45	34	268	27	154	422
11:00	156		172			23:00	50		21		
11:15	193		188			23:15	39		17		
11:30	181		196			23:30	37		18		
11:45	199	729	243	799	1528	23:45	30	156	19	75	231
Total Vol.		3759		5922	**9681**			8995		7228	**16223**

	Daily Totals EB	WB	**Combined**
	12754	13150	**25904**

	AM			**PM**		
Split %	38.8%	61.2%	**37.4%**	55.4%	44.6%	**62.6%**
Peak Hour	11:45	8:00	**8:00**	15:30	14:15	**15:00**
Volume	830	1294	**2049**	1138	885	**1967**
P.H.F.	0.93	0.93	**0.96**	0.93	0.91	**0.93**

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Tuesday, June 03, 2025 CITY: Mira Costa PROJECT: SC5432

ADT3 S Peck Ave north of Artesia Blvd. **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB			PM Period	NB		SB		
0:00	0		2			12:00	23		36		
0:15	1		0			12:15	17		31		
0:30	0		0			12:30	24		19		
0:45	1	2	0	2	4	12:45	24	88	22	108	196
1:00	0		1			13:00	28		82		
1:15	0		0			13:15	28		26		
1:30	1		0			13:30	21		26		
1:45	1	2	0	1	3	13:45	17	94	8	142	236
2:00	0		0			14:00	37		20		
2:15	1		0			14:15	61		32		
2:30	0		0			14:30	49		94		
2:45	0	1	0	0	1	14:45	48	195	25	171	366
3:00	0		0			15:00	44		73		
3:15	0		0			15:15	61		97		
3:30	0		0			15:30	36		54		
3:45	0	0	1	1	1	15:45	36	177	38	262	439
4:00	0		0			16:00	31		74		
4:15	0		2			16:15	28		53		
4:30	0		0			16:30	53		46		
4:45	0	0	0	2	2	16:45	39	151	36	209	360
5:00	1		1			17:00	30		33		
5:15	3		1			17:15	26		39		
5:30	3		1			17:30	37		37		
5:45	8	15	4	7	22	17:45	67	160	42	151	311
6:00	6		2			18:00	38		28		
6:15	7		3			18:15	37		27		
6:30	11		5			18:30	33		24		
6:45	26	50	8	18	68	18:45	53	161	9	88	249
7:00	42		17			19:00	16		16		
7:15	103		65			19:15	16		11		
7:30	61		44			19:30	6		15		
7:45	50	256	27	153	409	19:45	12	50	17	59	109
8:00	103		60			20:00	10		9		
8:15	153		70			20:15	3		6		
8:30	57		68			20:30	11		7		
8:45	42	355	24	222	577	20:45	10	34	30	52	86
9:00	24		28			21:00	13		14		
9:15	27		23			21:15	5		4		
9:30	16		22			21:30	5		5		
9:45	18	85	22	95	180	21:45	7	30	0	23	53
10:00	20		12			22:00	5		0		
10:15	23		16			22:15	4		3		
10:30	17		19			22:30	0		1		
10:45	25	85	21	68	153	22:45	1	10	1	5	15
11:00	15		18			23:00	1		1		
11:15	20		16			23:15	2		0		
11:30	12		18			23:30	0		4		
11:45	33	80	22	74	154	23:45	2	5	1	6	11
Total Vol.		931		643	**1574**			1155		1276	**2431**

Daily Totals

NB	SB	Combined
2086	1919	**4005**

	AM			PM		
Split %	59.1%	40.9%	**39.3%**	47.5%	52.5%	**60.7%**
Peak Hour	7:30	7:45	**7:45**	14:15	14:30	**14:30**
Volume	367	225	**588**	202	289	**491**
P.H.F.	0.60	0.80	**0.66**	0.83	0.74	**0.78**

cs@aimtd.com Tell. 714 253 7888

Tuesday, June 03, 2025 CITY: Mira Costa PROJECT: SC5432

ADT4 S Meadows Ave south of Artesia Blvd. **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB			PM Period	NB		SB		
0:00	1		1			12:00	16		46		
0:15	1		1			12:15	27		42		
0:30	0		1			12:30	11		22		
0:45	2	4	0	3	7	12:45	16	70	23	133	203
1:00	0		0			13:00	32		39		
1:15	0		1			13:15	14		35		
1:30	0		0			13:30	16		29		
1:45	0	0	0	1	1	13:45	11	73	21	124	197
2:00	0		0			14:00	30		26		
2:15	0		0			14:15	24		21		
2:30	0		1			14:30	40		50		
2:45	0	0	0	1	1	14:45	22	116	29	126	242
3:00	0		0			15:00	19		48		
3:15	0		0			15:15	23		25		
3:30	0		0			15:30	32		45		
3:45	0	0	0	0		15:45	32	106	29	147	253
4:00	0		0			16:00	29		50		
4:15	0		0			16:15	35		34		
4:30	0		0			16:30	39		63		
4:45	1	1	0	0	1	16:45	33	136	52	199	335
5:00	0		0			17:00	35		60		
5:15	0		0			17:15	54		51		
5:30	1		1			17:30	33		68		
5:45	0	1	1	2	3	17:45	30	152	46	225	377
6:00	1		1			18:00	27		42		
6:15	7		4			18:15	37		22		
6:30	6		3			18:30	17		22		
6:45	14	28	3	11	39	18:45	21	102	18	104	206
7:00	7		9			19:00	17		26		
7:15	36		10			19:15	29		18		
7:30	45		14			19:30	21		32		
7:45	47	135	19	52	187	19:45	34	101	34	110	211
8:00	39		41			20:00	9		29		
8:15	50		46			20:15	3		14		
8:30	65		45			20:30	3		15		
8:45	49	203	35	167	370	20:45	13	28	11	69	97
9:00	43		43			21:00	10		14		
9:15	14		23			21:15	3		8		
9:30	18		24			21:30	6		24		
9:45	22	97	19	109	206	21:45	4	23	3	49	72
10:00	15		13			22:00	2		13		
10:15	14		10			22:15	2		6		
10:30	13		26			22:30	1		3		
10:45	9	51	14	63	114	22:45	1	6	4	26	32
11:00	8		18			23:00	0		1		
11:15	15		15			23:15	0		1		
11:30	15		19			23:30	1		0		
11:45	44	82	24	76	158	23:45	1	2	1	3	5
Total Vol.		602		485	**1087**			915		1315	**2230**

Daily Totals

NB	SB	**Combined**
1517	1800	**3317**

	AM			**PM**		
Split %	55.4%	44.6%	**32.8%**	41.0%	59.0%	**67.2%**
Peak Hour	8:15	8:15	**8:15**	16:30	16:45	**16:30**
Volume	207	169	**376**	161	231	**387**
P.H.F.	0.80	0.92	**0.85**	0.75	0.85	**0.92**

cs@aimtd.com Tell. 714 253 7888

INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jun 3, 25

LOCATION: Mira Costa
NORTH & SOUTH: S Peck Ave
EAST & WEST: Nelson Ave-Driveway 1

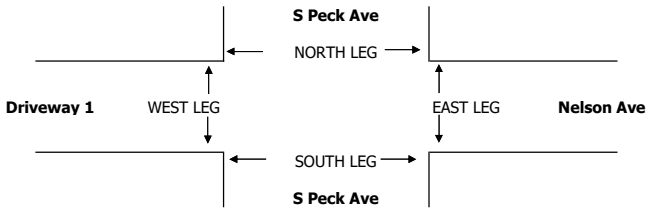
PROJECT #: SC5432
LOCATION #: 1
CONTROL: STOP ALL

NOTES: Queue NB/SB AM

AM
PM
MD
OTHER
OTHER

N ▲ | ◄ W | E ► | S ▼

		NORTHBOUND S Peck Ave			SOUTHBOUND S Peck Ave			EASTBOUND Driveway 1			WESTBOUND Nelson Ave				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	12	7	3	0	11	7	0	0	0	8	1	1	50	1	0	0	0	1
	7:15 AM	29	35	2	10	33	41	0	0	0	6	19	20	195	0	0	0	0	0
	7:30 AM	10	30	2	5	14	11	0	0	0	1	1	0	74	0	0	0	0	0
	7:45 AM	7	38	3	0	18	5	0	0	0	6	1	1	79	0	0	0	0	0
	8:00 AM	24	43	5	3	38	17	0	0	0	5	11	5	151	0	0	0	0	0
	8:15 AM	24	46	6	15	33	33	0	0	0	15	23	30	225	0	0	0	0	0
	8:30 AM	11	38	7	5	38	8	0	0	0	1	2	1	111	0	0	0	0	0
	8:45 AM	5	28	6	0	15	0	0	0	0	4	0	1	59	0	0	0	0	0
	VOLUMES	122	265	34	38	200	122	0	0	0	46	58	59	945	1	0	0	0	1
	APPROACH %	29%	63%	8%	11%	56%	34%	0%	0%	0%	28%	36%	36%						
	APP/DEPART	422	/	324	360	/	247	0	/	72	163	/	302	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	66	165	21	23	127	63	0	0	0	27	37	37	566	0	0	0	0	
	APPROACH %	26%	65%	8%	11%	60%	30%	0%	0%	0%	27%	37%	37%						
	PEAK HR FACTOR		0.829			0.657			0.000			0.371		0.629					
	APP/DEPART	252	/	202	213	/	154	0	/	44	101	/	166	0					
PM	4:00 PM	11	26	3	1	42	2	0	0	0	7	0	2	94	1	0	0	0	1
	4:15 PM	5	25	2	2	39	3	0	0	0	10	0	2	88	0	0	0	0	0
	4:30 PM	7	35	2	0	33	1	0	0	0	3	0	0	81	0	0	0	0	0
	4:45 PM	1	31	3	0	24	1	0	0	0	2	0	0	62	0	0	0	0	0
	5:00 PM	1	22	2	4	24	0	0	0	0	3	0	3	59	0	0	0	0	0
	5:15 PM	2	26	3	2	33	2	0	0	1	3	2	0	74	0	0	0	0	0
	5:30 PM	3	30	3	1	25	6	0	0	0	5	3	1	77	0	0	0	0	0
	5:45 PM	16	58	1	1	36	19	0	0	0	5	8	1	145	0	0	0	0	0
	VOLUMES	46	253	19	11	256	34	0	0	1	38	13	9	681	1	0	0	0	1
	APPROACH %	14%	79%	6%	4%	85%	11%	0%	0%	100%	63%	22%	15%						
	APP/DEPART	319	/	262	301	/	296	1	/	30	60	/	93	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	22	136	9	8	118	27	0	0	1	16	13	5	355	0	0	0	0	
	APPROACH %	13%	81%	5%	5%	77%	18%	0%	0%	100%	47%	38%	15%						
	PEAK HR FACTOR		0.557			0.683			0.250			0.607		0.612					
	APP/DEPART	167	/	141	153	/	135	1	/	17	34	/	62	0					



		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		N LEG	S LEG	E LEG	W LEG	TOTAL	N LEG	S LEG	E LEG	W LEG	TOTAL	NL	SL	EL	WL	TOTAL
AM	7:00 AM	0	3	2	0	5	0	1	1	0	2	0	2	1	0	3
	7:15 AM	3	42	14	2	61	2	41	14	0	57	1	1	0	2	4
	7:30 AM	0	10	7	3	20	0	10	7	3	20	0	0	0	0	0
	7:45 AM	0	1	7	5	13	0	1	2	3	6	0	0	5	2	7
	8:00 AM	0	4	3	2	9	0	4	3	0	7	0	0	0	2	2
	8:15 AM	78	8	25	5	116	76	8	24	0	108	2	0	1	5	8
	8:30 AM	6	3	5	3	17	4	3	3	1	11	2	0	2	2	6
	8:45 AM	0	1	0	5	6	0	0	0	5	5	0	1	0	0	1
	TOTAL	87	72	63	25	247	82	68	54	12	216	5	4	9	13	31
	BEGIN PEAK HR			7:45 AM			80	16	32	4	132					
PM	4:00 PM	0	1	1	2	4	0	1	1	2	4	0	0	0	0	0
	4:15 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	4:30 PM	0	2	2	0	4	0	2	0	0	2	0	0	2	0	2
	4:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	2	2	0	0	0	1	1	0	0	0	1	1
	5:30 PM	0	0	0	2	2	0	0	0	1	1	0	0	0	1	1
	5:45 PM	0	5	1	0	6	0	5	0	0	5	0	0	1	0	1
	TOTAL	0	9	4	7	20	0	9	1	4	14	0	0	3	3	6
	BEGIN PEAK HR			5:00 PM			0	5	0	2	7					

INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jun 3, 25

LOCATION: Mira Costa
NORTH & SOUTH: S Peck Ave
EAST & WEST: Driveway 2

PROJECT #: SC5432
LOCATION #: 2
CONTROL: NO CONTROL

NOTES:
Queue NB/SB AM

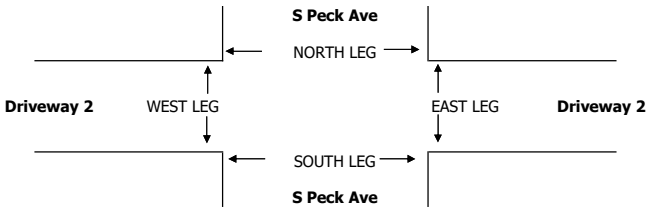
AM / PM / MD / OTHER / OTHER

N / W / E / S

		NORTHBOUND S Peck Ave			SOUTHBOUND S Peck Ave			EASTBOUND Driveway 2			WESTBOUND Driveway 2			
	LANES:	NL X	NT 1	NR X	SL X	ST 1	SR X	EL 0	ET X	ER 0	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	21	0	0	19	0	1	0	4	0	0	0	45
	7:15 AM	0	50	0	0	39	0	16	0	51	0	0	0	156
	7:30 AM	0	31	0	0	15	0	11	0	26	0	0	0	83
	7:45 AM	0	47	0	0	24	0	1	0	8	0	0	0	80
	8:00 AM	0	67	0	0	43	0	7	0	23	0	0	0	140
	8:15 AM	0	71	0	0	48	0	5	0	8	0	0	0	132
	8:30 AM	0	51	0	0	39	0	5	0	26	0	0	0	121
	8:45 AM	0	39	0	0	19	0	0	0	5	0	0	0	63
	VOLUMES	0	377	0	0	246	0	46	0	151	0	0	0	821
	APPROACH %	0%	100%	0%	0%	100%	0%	23%	0%	77%	0%	0%	0%	
	APP/DEPART	378	/	423	246	/	398	197	/	0	0	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	236	0	0	154	0	18	0	65	0	0	0	474
	APPROACH %	0%	100%	0%	0%	100%	0%	22%	0%	78%	0%	0%	0%	
	PEAK HR FACTOR		0.835			0.802			0.669			0.000		0.840
	APP/DEPART	237	/	254	154	/	220	83	/	0	0	/	0	0
PM	4:00 PM	0	35	0	0	49	0	5	0	23	0	0	0	112
	4:15 PM	0	29	0	0	49	0	3	0	3	0	0	0	84
	4:30 PM	0	42	0	0	36	0	2	0	9	0	0	0	89
	4:45 PM	0	35	0	0	26	0	0	0	6	0	0	0	67
	5:00 PM	0	26	0	0	27	0	0	0	5	0	0	0	58
	5:15 PM	0	31	0	0	36	0	0	0	4	0	0	0	71
	5:30 PM	0	34	0	0	30	0	2	0	7	0	0	0	73
	5:45 PM	0	62	0	0	41	0	13	0	23	0	0	0	139
	VOLUMES	0	294	0	0	294	0	25	0	80	0	0	0	693
	APPROACH %	0%	100%	0%	0%	100%	0%	24%	0%	76%	0%	0%	0%	
	APP/DEPART	294	/	319	294	/	374	105	/	0	0	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	141	0	0	160	0	10	0	41	0	0	0	352
	APPROACH %	0%	100%	0%	0%	100%	0%	20%	0%	80%	0%	0%	0%	
	PEAK HR FACTOR		0.839			0.816			0.455			0.000		0.786
	APP/DEPART	141	/	151	160	/	201	51	/	0	0	/	0	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	1	0	0	0	1
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
VOLUMES	1	0	0	0	1
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0
VOLUMES	1	0	0	0	
VOLUMES	0	0	0	0	



ALL PED + BIKE & SCOOTER

	N LEG	S LEG	E LEG	W LEG	TOTAL
7:00 AM	0	0	0	4	4
7:15 AM	2	0	1	16	19
7:30 AM	1	0	0	7	8
7:45 AM	0	0	2	8	10
8:00 AM	0	0	0	2	2
8:15 AM	0	0	1	1	2
8:30 AM	0	0	0	6	6
8:45 AM	0	0	0	2	2
TOTAL	3	0	4	46	53
BEGIN PEAK HR	7:45 AM				
4:00 PM	0	0	0	3	3
4:15 PM	0	0	0	1	1
4:30 PM	2	0	1	0	3
4:45 PM	0	0	0	1	1
5:00 PM	0	0	2	0	2
5:15 PM	0	0	0	1	1
5:30 PM	0	0	0	1	1
5:45 PM	0	0	0	0	0
TOTAL	2	0	3	7	12
BEGIN PEAK HR	4:00 PM				

PEDESTRIAN CROSSINGS

	N LEG	S LEG	E LEG	W LEG	TOTAL
7:00 AM	0	0	0	3	3
7:15 AM	2	0	0	14	16
7:30 AM	1	0	0	4	5
7:45 AM	0	0	0	6	6
8:00 AM	0	0	0	1	1
8:15 AM	0	0	0	1	1
8:30 AM	0	0	0	6	6
8:45 AM	0	0	0	2	2
TOTAL	3	0	0	37	40
BEGIN PEAK HR	0	0	0	14	14
4:00 PM	0	0	0	3	3
4:15 PM	0	0	0	1	1
4:30 PM	2	0	0	0	2
4:45 PM	0	0	0	1	1
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	1	1
5:45 PM	0	0	0	0	0
TOTAL	2	0	0	6	8
BEGIN PEAK HR	2	0	0	5	7

BICYCLE & SCOOTER CROSSINGS

	NL	SL	EL	WL	TOTAL
7:00 AM	0	0	0	1	1
7:15 AM	0	0	1	2	3
7:30 AM	0	0	0	3	3
7:45 AM	0	0	2	2	4
8:00 AM	0	0	0	1	1
8:15 AM	0	0	1	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	4	9	13
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	1	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	2	0	2
5:15 PM	0	0	0	1	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	3	1	4

INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jun 3, 25

LOCATION: Mira Costa
NORTH & SOUTH: S Peck Ave
EAST & WEST: Driveway 3

PROJECT #: SC5432
LOCATION #: 3
CONTROL: STOP E

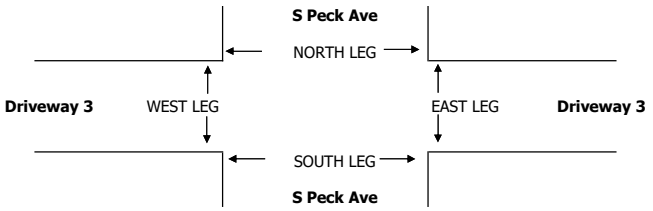
NOTES:
Queue NB/SB AM

AM / PM / MD / OTHER / OTHER

		NORTHBOUND S Peck Ave			SOUTHBOUND S Peck Ave			EASTBOUND Driveway 3			WESTBOUND Driveway 3			
	LANES:	NL 0	NT 1	NR X	SL X	ST 1	SR 0	EL 0	ET X	ER 0	WL X	WT X	WR X	TOTAL
AM	7:00 AM	10	32	0	0	14	9	0	0	3	0	0	0	68
	7:15 AM	57	46	0	0	55	19	1	0	10	0	0	0	188
	7:30 AM	30	31	0	0	43	5	1	0	1	0	0	0	111
	7:45 AM	12	38	0	0	27	1	0	0	0	0	0	0	78
	8:00 AM	35	68	0	0	57	8	2	0	3	0	0	0	173
	8:15 AM	27	122	0	0	70	9	2	0	0	0	0	0	230
	8:30 AM	14	43	0	0	68	6	1	0	0	0	0	0	132
	8:45 AM	4	38	0	0	26	2	1	0	0	0	0	0	71
	VOLUMES	189	418	0	0	360	59	8	0	17	0	0	0	1,052
	APPROACH %	31%	69%	0%	0%	86%	14%	32%	0%	68%	0%	0%	0%	
	APP/DEPART	608	/	426	419	/	378	25	/	0	0	/	248	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	88	271	0	0	222	24	5	0	3	0	0	0	614
	APPROACH %	24%	75%	0%	0%	90%	10%	63%	0%	38%	0%	0%	0%	
	PEAK HR FACTOR		0.604			0.778			0.400			0.000		0.667
	APP/DEPART	360	/	276	246	/	226	8	/	0	0	/	112	0
PM	4:00 PM	1	30	0	0	72	2	4	0	2	0	0	0	111
	4:15 PM	1	27	0	0	51	1	2	0	2	0	0	0	84
	4:30 PM	1	52	0	0	42	2	0	0	4	0	0	0	101
	4:45 PM	1	37	0	0	36	0	0	0	0	0	0	0	74
	5:00 PM	0	30	0	0	32	0	0	0	1	0	0	0	63
	5:15 PM	1	25	0	0	35	3	7	0	4	0	0	0	75
	5:30 PM	7	30	0	0	36	11	3	0	3	0	0	0	90
	5:45 PM	9	58	0	0	37	24	5	0	5	0	0	0	138
	VOLUMES	21	289	0	0	341	43	21	0	21	0	0	0	736
	APPROACH %	7%	93%	0%	0%	89%	11%	50%	0%	50%	0%	0%	0%	
	APP/DEPART	310	/	310	384	/	362	42	/	0	0	/	64	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	4	146	0	0	201	5	6	0	8	0	0	0	370
	APPROACH %	3%	97%	0%	0%	98%	2%	43%	0%	57%	0%	0%	0%	
	PEAK HR FACTOR		0.708			0.696			0.583			0.000		0.833
	APP/DEPART	150	/	152	206	/	209	14	/	0	0	/	9	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	1	0	0	0	1
8:45 AM	0	0	0	0	0
VOLUMES	1	0	0	0	1
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0
VOLUMES	0	0	0	0	



		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		N LEG	S LEG	E LEG	W LEG	TOTAL	N LEG	S LEG	E LEG	W LEG	TOTAL	NL	SL	EL	WL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	1	4	5	0	0	0	0	0	0	0	1	4	5
	7:30 AM	0	0	1	2	3	0	0	0	1	1	0	0	1	1	2
	7:45 AM	0	0	2	4	6	0	0	0	3	3	0	0	2	1	3
	8:00 AM	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0
	8:15 AM	0	0	0	7	7	0	0	0	5	5	0	0	0	2	2
	8:30 AM	0	0	0	5	5	0	0	0	5	5	0	0	0	0	0
	8:45 AM	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0
	TOTAL	0	0	4	26	30	0	0	0	18	18	0	0	4	8	12
	BEGIN PEAK HR			7:45 AM			0	0	0	15	15					
PM	4:00 PM	0	0	0	4	4	0	0	0	4	4	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	2	2
	4:45 PM	0	0	0	3	3	0	0	0	0	0	0	0	0	3	3
	5:00 PM	0	0	0	3	3	0	0	0	2	2	0	0	0	1	1
	5:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
	5:30 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	5:45 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	TOTAL	0	0	0	15	15	0	0	0	8	8	0	0	0	7	7
	BEGIN PEAK HR			4:00 PM			0	0	0	4	4					

INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jun 3, 25

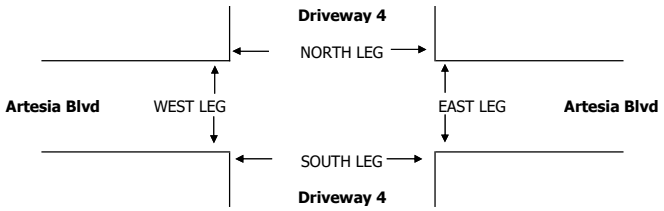
LOCATION: Mira Costa
NORTH & SOUTH: Driveway 4
EAST & WEST: Artesia Blvd

PROJECT #: SC5432
LOCATION #: 4
CONTROL: NO CONTROL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Driveway 4			SOUTHBOUND Driveway 4			EASTBOUND Artesia Blvd			WESTBOUND Artesia Blvd				U-TURNS				
	LANES:	NL X	NT X	NR X	SL X	ST X	SR 0	EL X	ET 2	ER X	WL X	WT 2	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	0	0	0	0	1	0	111	0	0	201	0	313	0	0	0	0	0
	7:15 AM	0	0	0	0	0	12	0	173	0	0	349	0	534	0	0	0	0	0
	7:30 AM	0	0	0	0	0	6	0	125	0	0	307	0	438	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	160	0	0	355	0	515	0	0	0	0	0
	8:00 AM	0	0	0	0	0	5	0	215	0	0	344	0	564	0	0	0	0	0
	8:15 AM	0	0	0	0	0	29	0	237	0	0	345	0	611	0	0	0	0	0
	8:30 AM	0	0	0	0	0	3	0	213	0	0	340	0	556	0	0	0	0	0
	8:45 AM	0	0	0	0	0	1	0	207	0	0	365	0	573	0	0	0	0	0
	VOLUMES	0	0	0	0	0	57	0	1,441	0	0	2,606	0	4,104	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%						
	APP/DEPART	0	/	0	57	/	0	1,441	/	1,441	2,606	/	2,663	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	0	0	0	0	0	38	0	872	0	0	1,394	0	2,304	0	0	0	0	
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.000			0.328			0.920			0.955		0.943					
	APP/DEPART	0	/	0	38	/	0	872	/	872	1,394	/	1,432	0					
PM	4:00 PM	0	0	0	0	0	5	0	297	0	0	228	0	530	0	0	0	0	0
	4:15 PM	0	0	0	0	0	3	0	345	0	0	241	0	589	0	0	0	0	0
	4:30 PM	0	0	0	0	0	1	0	325	0	0	244	0	570	0	0	0	0	0
	4:45 PM	0	0	0	0	0	2	0	323	0	0	218	0	543	0	0	0	0	0
	5:00 PM	0	0	0	0	0	5	0	315	0	0	223	0	543	0	0	0	0	0
	5:15 PM	0	0	0	0	0	12	0	313	0	0	214	0	539	0	0	0	0	0
	5:30 PM	0	0	0	0	0	2	0	307	0	0	200	0	509	0	0	0	0	0
	5:45 PM	0	0	0	0	0	8	0	333	0	0	225	0	566	0	0	0	0	0
	VOLUMES	0	0	0	0	0	38	0	2,558	0	0	1,793	0	4,389	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%						
	APP/DEPART	0	/	0	38	/	0	2,558	/	2,558	1,793	/	1,831	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	0	0	0	0	0	11	0	1,308	0	0	926	0	2,245	0	0	0	0	
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.000			0.550			0.948			0.949		0.953					
	APP/DEPART	0	/	0	11	/	0	1,308	/	1,308	926	/	937	0					



		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		N LEG	S LEG	E LEG	W LEG	TOTAL	N LEG	S LEG	E LEG	W LEG	TOTAL	NL	SL	EL	WL	TOTAL
AM	7:00 AM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
	7:15 AM	4	2	0	0	6	1	0	0	0	1	3	2	0	0	5
	7:30 AM	9	0	0	0	9	6	0	0	0	6	3	0	0	0	3
	7:45 AM	3	1	0	0	4	2	0	0	0	2	1	1	0	0	2
	8:00 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:15 AM	6	1	0	0	7	5	0	0	0	5	1	1	0	0	2
	8:30 AM	8	1	0	4	13	5	0	0	4	9	3	1	0	0	4
	8:45 AM	6	0	0	0	6	3	0	0	0	3	3	0	0	0	3
	TOTAL	38	6	0	4	48	23	0	0	4	27	15	6	0	0	21
	BEGIN PEAK HR	8:00 AM					14	0	0	4	18					
PM	4:00 PM	5	0	0	0	5	3	0	0	0	3	2	0	0	0	2
	4:15 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	4:30 PM	4	1	0	0	5	3	0	0	0	3	1	1	0	0	2
	4:45 PM	5	0	0	0	5	2	0	0	0	2	3	0	0	0	3
	5:00 PM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	19	1	0	0	20	10	0	0	0	10	9	1	0	0	10
	BEGIN PEAK HR	4:15 PM					6	0	0	0	6					

INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jun 3, 25

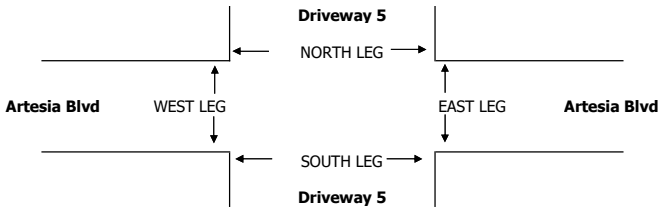
LOCATION: Mira Costa
NORTH & SOUTH: Driveway 5
EAST & WEST: Artesia Blvd

PROJECT #: SC5432
LOCATION #: 5
CONTROL: NO CONTROL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Driveway 5			SOUTHBOUND Driveway 5			EASTBOUND Artesia Blvd			WESTBOUND Artesia Blvd				U-TURNS				
	LANES:	NL X	NT X	NR X	SL X	ST X	SR 0	EL X	ET 2	ER X	WL X	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	0	0	0	0	0	0	111	0	0	196	6	313	0	0	0	0	0
	7:15 AM	0	0	0	0	0	1	0	165	0	0	345	11	522	0	0	0	0	0
	7:30 AM	0	0	0	0	0	5	0	125	0	0	305	8	443	0	0	0	0	0
	7:45 AM	0	0	0	0	0	1	0	160	0	0	343	12	516	0	0	0	0	0
	8:00 AM	0	0	0	0	0	6	0	211	0	0	328	21	566	0	0	0	0	0
	8:15 AM	0	0	0	0	0	20	0	237	0	0	348	26	631	0	0	0	0	0
	8:30 AM	0	0	0	0	0	11	0	213	0	0	335	8	567	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	207	0	0	359	7	573	0	0	0	0	0
	VOLUMES	0	0	0	0	0	44	0	1,429	0	0	2,559	99	4,131	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	96%	4%						
	APP/DEPART	0	/	99	44	/	0	1,429	/	1,429	2,658	/	2,603	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	0	0	0	0	0	37	0	868	0	0	1,370	62	2,337	0	0	0	0	
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	96%	4%						
	PEAK HR FACTOR		0.000			0.463			0.916			0.957		0.926					
	APP/DEPART	0	/	62	37	/	0	868	/	868	1,432	/	1,407	0					
PM	4:00 PM	0	0	0	0	0	5	0	297	0	0	233	0	535	0	0	0	0	0
	4:15 PM	0	0	0	0	0	1	0	339	0	0	244	0	584	0	0	0	0	0
	4:30 PM	0	0	0	0	0	2	0	325	0	0	241	2	570	0	0	0	0	0
	4:45 PM	0	0	0	0	0	1	0	323	0	0	220	0	544	0	0	0	0	0
	5:00 PM	0	0	0	0	0	3	0	315	0	0	228	0	546	0	0	0	0	0
	5:15 PM	0	0	0	0	0	2	0	313	0	0	225	1	541	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	307	0	0	202	0	509	0	0	0	0	0
	5:45 PM	0	0	0	0	0	1	0	325	0	0	233	0	559	0	0	0	0	0
	VOLUMES	0	0	0	0	0	15	0	2,544	0	0	1,826	3	4,388	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%						
	APP/DEPART	0	/	3	15	/	0	2,544	/	2,544	1,829	/	1,841	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	0	0	0	0	0	7	0	1,302	0	0	933	2	2,244	0	0	0	0	
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.000			0.583			0.960			0.958		0.961					
	APP/DEPART	0	/	2	7	/	0	1,302	/	1,302	935	/	940	0					



		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		N LEG	S LEG	E LEG	W LEG	TOTAL	N LEG	S LEG	E LEG	W LEG	TOTAL	NL	SL	EL	WL	TOTAL
AM	7:00 AM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
	7:15 AM	5	2	0	1	8	3	0	0	1	4	2	2	0	0	4
	7:30 AM	6	0	0	0	6	5	0	0	0	5	1	0	0	0	1
	7:45 AM	3	1	0	0	4	3	0	0	0	3	0	1	0	0	1
	8:00 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:15 AM	7	1	0	0	8	7	0	0	0	7	0	1	0	0	1
	8:30 AM	4	0	0	0	4	3	0	0	0	3	1	0	0	0	1
	8:45 AM	1	0	1	0	2	0	0	1	0	1	1	0	0	0	1
	TOTAL	28	5	1	1	35	22	0	1	1	24	6	5	0	0	11
	BEGIN PEAK HR			8:00 AM			11	0	1	0	12					
PM	4:00 PM	5	0	0	0	5	3	0	0	0	3	2	0	0	0	2
	4:15 PM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
	4:30 PM	2	1	0	0	3	2	0	0	0	2	0	1	0	0	1
	4:45 PM	4	0	0	0	4	2	0	0	0	2	2	0	0	0	2
	5:00 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	14	2	0	0	16	8	0	0	0	8	6	2	0	0	8
	BEGIN PEAK HR			4:15 PM			4	0	0	0	4					

INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Mira Costa	PROJECT #:	SC5432
Tue, Jun 3, 25	NORTH & SOUTH:	S Peck Ave	LOCATION #:	6
	EAST & WEST:	Artesia Blvd	CONTROL:	SIGNAL

NOTES:

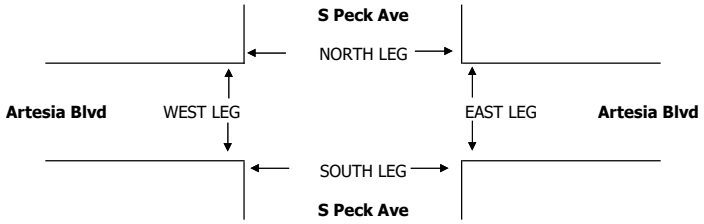
Queue NB/SB AM

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Ford Ave			SOUTHBOUND Ford Ave			EASTBOUND Artesia Blvd			WESTBOUND Artesia Blvd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	11	6	1	4	1	12	25	80	5	1	177	11	334
	7:15 AM	13	21	1	20	6	39	45	113	6	5	288	37	594
	7:30 AM	27	14	3	8	5	31	30	88	1	3	248	17	475
	7:45 AM	44	12	1	5	5	17	19	134	7	1	294	19	558
	8:00 AM	30	27	1	16	7	37	41	160	12	10	275	35	651
	8:15 AM	28	34	2	29	5	36	58	157	22	4	281	61	717
	8:30 AM	34	15	4	18	9	41	27	173	13	5	265	15	619
	8:45 AM	25	16	1	8	3	13	15	184	6	2	328	11	612
	VOLUMES	212	145	14	108	41	226	260	1,089	72	31	2,156	206	4,578
	APPROACH %	57%	39%	4%	29%	11%	60%	18%	76%	5%	1%	90%	9%	
	APP/DEPART	371	/	611	375	/	144	1,436	/	1,214	2,396	/	2,609	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	117	92	8	71	24	127	141	674	53	21	1,149	122	2,605
	APPROACH %	54%	42%	4%	32%	11%	57%	16%	77%	6%	2%	89%	9%	
	PEAK HR FACTOR		0.848			0.793			0.920			0.932		0.907
	APP/DEPART	217	/	355	222	/	98	872	/	755	1,294	/	1,397	0
PM	4:00 PM	21	2	2	23	11	40	26	248	23	5	167	3	571
	4:15 PM	11	2	2	13	16	24	21	290	31	15	203	5	633
	4:30 PM	13	8	0	6	13	27	33	246	45	7	203	12	613
	4:45 PM	16	7	1	11	5	20	27	252	43	10	181	5	578
	5:00 PM	18	5	0	7	8	18	17	255	39	15	187	8	577
	5:15 PM	17	8	3	13	15	11	16	268	29	9	186	2	577
	5:30 PM	15	6	0	12	8	17	21	248	38	10	168	10	553
	5:45 PM	17	6	1	7	9	26	46	256	31	11	185	15	610
	VOLUMES	128	44	9	92	85	183	207	2,063	279	82	1,480	60	4,729
	APPROACH %	71%	24%	5%	26%	24%	51%	8%	81%	11%	5%	91%	4%	
	APP/DEPART	181	/	311	360	/	446	2,554	/	2,176	1,634	/	1,796	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	58	22	3	37	42	89	98	1,043	158	47	774	30	2,414
	APPROACH %	70%	27%	4%	22%	25%	53%	8%	80%	12%	5%	90%	3%	
	PEAK HR FACTOR		0.865			0.792			0.945			0.954		0.946
	APP/DEPART	83	/	150	168	/	247	1,304	/	1,091	859	/	926	0

U-TURNS

	NB	SB	EB	WB	TTL
	0	0	0	0	
7:00 AM	0	0	1	0	1
7:15 AM	0	0	9	0	9
7:30 AM	0	0	1	0	1
7:45 AM	0	0	0	1	1
8:00 AM	0	0	2	0	2
8:15 AM	0	0	0	1	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	2	1	3
AM TOTAL	0	0	15	3	18
AM PEAK HR	0	0	4	2	
4:00 PM	0	0	0	2	2
4:15 PM	0	0	3	2	5
4:30 PM	0	0	1	2	3
4:45 PM	0	0	1	3	4
5:00 PM	0	0	0	1	1
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	2	2
PM TOTAL	0	0	5	12	17
PM PEAK HR	0	0	5	8	



ALL PED + BIKE & SCOOTER

	N LEG	S LEG	E LEG	W LEG	TOTAL
7:00 AM	0	1	1	2	4
7:15 AM	7	3	4	12	26
7:30 AM	4	1	2	4	11
7:45 AM	2	3	5	0	10
8:00 AM	2	1	1	1	5
8:15 AM	5	16	5	57	83
8:30 AM	2	5	3	2	12
8:45 AM	0	2	0	1	3
AM TOTAL	22	32	21	79	154
AM BEGIN PEAK HR			8:00 AM		
4:00 PM	2	1	3	4	10
4:15 PM	1	0	0	3	4
4:30 PM	4	2	3	1	10
4:45 PM	1	1	0	1	3
5:00 PM	2	1	0	1	4
5:15 PM	0	2	0	1	3
5:30 PM	1	3	1	0	5
5:45 PM	0	0	2	1	3
PM TOTAL	11	10	9	12	42
PM BEGIN PEAK HR			4:15 PM		

PEDESTRIAN CROSSINGS

	N LEG	S LEG	E LEG	W LEG	TOTAL
7:00 AM	0	0	1	2	3
7:15 AM	2	3	1	10	16
7:30 AM	3	1	1	3	8
7:45 AM	2	1	1	0	4
8:00 AM	2	0	0	0	2
8:15 AM	3	16	3	49	71
8:30 AM	2	3	2	1	8
8:45 AM	0	2	0	1	3
AM TOTAL	14	26	9	66	115
AM BEGIN PEAK HR	7	21	5	51	84
4:00 PM	1	1	2	3	7
4:15 PM	0	0	0	1	1
4:30 PM	4	2	3	0	9
4:45 PM	1	1	0	0	2
5:00 PM	0	1	0	1	2
5:15 PM	0	2	0	0	2
5:30 PM	0	2	0	0	2
5:45 PM	0	0	0	1	1
PM TOTAL	6	9	5	6	26
PM BEGIN PEAK HR	5	4	3	2	14

BICYCLE & SCOOTER CROSSINGS

	NL	SL	EL	WL	TOTAL
7:00 AM	0	1	0	0	1
7:15 AM	5	0	3	2	10
7:30 AM	1	0	1	1	3
7:45 AM	0	2	4	0	6
8:00 AM	0	1	1	1	3
8:15 AM	2	0	2	8	12
8:30 AM	0	2	1	1	4
8:45 AM	0	0	0	0	0
AM TOTAL	8	6	12	13	39
AM BEGIN PEAK HR					
4:00 PM	1	0	1	1	3
4:15 PM	1	0	0	2	3
4:30 PM	0	0	0	1	1
4:45 PM	0	0	0	1	1
5:00 PM	2	0	0	0	2
5:15 PM	0	0	0	1	1
5:30 PM	1	1	1	0	3
5:45 PM	0	0	2	0	2
PM TOTAL	5	1	4	6	16
PM BEGIN PEAK HR					

INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jun 3, 25

LOCATION: Mira Costa
NORTH & SOUTH: S Peck Ave
EAST & WEST: Ruhland Ave

PROJECT #: SC5432
LOCATION #: 7
CONTROL: STOP ALL

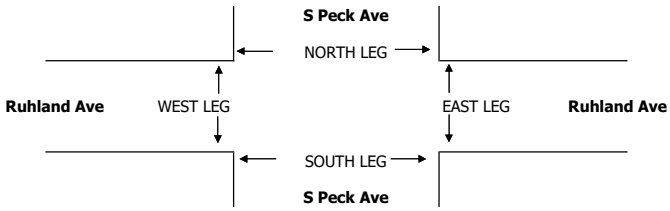
NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND S Peck Ave			SOUTHBOUND S Peck Ave			EASTBOUND Ruhland Ave			WESTBOUND Ruhland Ave			
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	6	2	2	16	0	0	0	0	2	0	0	28
	7:15 AM	0	45	5	5	83	0	0	0	0	4	0	2	144
	7:30 AM	0	33	2	1	26	0	0	0	0	2	0	0	64
	7:45 AM	0	35	0	1	22	0	0	0	0	1	0	2	61
	8:00 AM	0	49	4	0	47	0	0	0	0	6	0	2	108
	8:15 AM	0	74	10	6	84	0	0	0	0	9	0	9	192
	8:30 AM	0	38	1	3	29	0	0	0	0	3	0	2	76
	8:45 AM	0	27	1	1	16	0	0	0	0	1	0	0	46
	VOLUMES	0	307	25	19	323	0	0	0	0	28	0	17	727
	APPROACH %	0%	92%	7%	5%	93%	0%	0%	0%	0%	62%	0%	38%	
	APP/DEPART	334	/	330	348	/	353	0	/	44	45	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	196	15	10	182	0	0	0	0	19	0	15	441
	APPROACH %	0%	92%	7%	5%	94%	0%	0%	0%	0%	56%	0%	44%	
	PEAK HR FACTOR		0.634			0.539			0.000			0.472		0.574
	APP/DEPART	213	/	213	194	/	203	0	/	25	34	/	0	0
PM	4:00 PM	0	25	1	3	40	0	0	0	0	3	0	2	74
	4:15 PM	0	29	1	1	41	0	0	0	0	3	0	2	77
	4:30 PM	0	32	2	3	30	0	0	0	0	3	0	4	74
	4:45 PM	0	29	1	0	23	0	0	0	0	2	0	1	56
	5:00 PM	0	23	2	1	22	0	0	0	0	6	0	0	54
	5:15 PM	0	24	4	1	33	0	0	0	0	2	0	3	67
	5:30 PM	0	31	2	5	33	0	0	0	0	0	0	0	71
	5:45 PM	0	52	3	3	55	0	0	0	0	1	0	2	116
	VOLUMES	0	245	16	17	277	0	0	0	0	20	0	14	596
	APPROACH %	0%	94%	6%	6%	92%	0%	0%	0%	0%	59%	0%	41%	
	APP/DEPART	262	/	265	300	/	298	0	/	33	34	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	130	11	10	143	0	0	0	0	9	0	5	311
	APPROACH %	0%	92%	8%	6%	92%	0%	0%	0%	0%	64%	0%	36%	
	PEAK HR FACTOR		0.641			0.639			0.000			0.583		0.653
	APP/DEPART	141	/	138	156	/	152	0	/	21	14	/	0	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	4	0	0	4
7:30 AM	0	0	0	0	0
7:45 AM	0	1	0	0	1
8:00 AM	1	0	0	0	1
8:15 AM	0	0	0	0	0
8:30 AM	1	1	0	0	2
8:45 AM	0	0	0	0	0
VOLUMES	2	6	0	0	8
BEGIN PEAK HR					
VOLUMES	2	2	0	0	
4:00 PM	0	1	0	0	1
4:15 PM	1	1	0	0	2
4:30 PM	0	1	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	3	0	0	3
VOLUMES	1	6	0	0	7
BEGIN PEAK HR					
VOLUMES	0	3	0	0	



		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		N LEG	S LEG	E LEG	W LEG	TOTAL	N LEG	S LEG	E LEG	W LEG	TOTAL	NL	SL	EL	WL	TOTAL
AM	7:00 AM	0	1	2	1	4	0	1	2	0	3	0	0	0	1	1
	7:15 AM	0	15	2	7	24	0	15	1	0	16	0	0	1	7	8
	7:30 AM	0	3	0	1	4	0	3	0	0	3	0	0	0	1	1
	7:45 AM	0	3	4	1	8	0	3	0	0	3	0	0	4	1	5
	8:00 AM	0	9	0	1	10	0	9	0	0	9	0	0	0	1	1
	8:15 AM	1	44	5	5	55	1	43	5	0	49	0	1	0	5	6
	8:30 AM	0	5	0	2	7	0	5	0	0	5	0	0	0	2	2
	8:45 AM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
	TOTAL	1	82	13	18	114	1	81	8	0	90	0	1	5	18	24
	BEGIN PEAK HR			7:45 AM			1	60	5	0	66					
PM	4:00 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
	4:15 PM	1	2	0	0	3	1	2	0	0	3	0	0	0	0	0
	4:30 PM	0	2	1	0	3	0	2	0	0	2	0	0	1	0	1
	4:45 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	1	0	1	2	0	1	0	0	1	0	0	0	1	1
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	TOTAL	2	7	2	1	12	2	7	0	0	9	0	0	2	1	3
	BEGIN PEAK HR			5:00 PM			0	1	0	0	1					

INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jun 3, 25

LOCATION: Mira Costa
NORTH & SOUTH: S Peck Ave
EAST & WEST: Voorhees Ave

PROJECT #: SC5432
LOCATION #: 8
CONTROL: STOP ALL

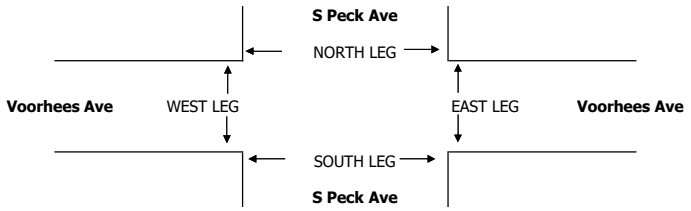
NOTES: Queue NB/SB AM

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND S Peck Ave			SOUTHBOUND S Peck Ave			EASTBOUND Voorhees Ave			WESTBOUND Voorhees Ave			
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	8	0	0	19	0	0	0	0	0	0	0	27
	7:15 AM	0	34	2	5	86	0	0	0	0	1	0	4	132
	7:30 AM	0	33	2	0	27	0	0	0	0	0	0	3	65
	7:45 AM	0	39	1	2	20	0	0	0	0	0	0	2	64
	8:00 AM	0	46	2	7	51	0	0	0	0	3	0	3	112
	8:15 AM	0	68	6	11	91	0	0	0	0	4	0	8	188
	8:30 AM	0	48	1	6	32	0	0	0	0	1	0	1	89
	8:45 AM	0	26	1	4	16	0	0	0	0	0	0	3	50
	VOLUMES	0	302	15	35	342	0	0	0	0	9	0	24	739
	APPROACH %	0%	95%	5%	9%	88%	0%	0%	0%	0%	27%	0%	73%	
	APP/DEPART	319	/	336	387	/	353	0	/	50	33	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	201	10	26	194	0	0	0	0	8	0	14	458
	APPROACH %	0%	95%	5%	12%	87%	0%	0%	0%	0%	36%	0%	64%	
	PEAK HR FACTOR		0.716			0.544			0.000			0.458		0.606
	APP/DEPART	212	/	219	224	/	203	0	/	36	22	/	0	0
PM	4:00 PM	0	30	1	2	42	0	0	0	0	2	0	1	78
	4:15 PM	0	27	4	4	43	0	0	0	0	1	0	2	81
	4:30 PM	0	33	1	5	28	0	0	0	0	0	0	0	67
	4:45 PM	0	26	3	5	25	0	0	0	0	1	0	1	61
	5:00 PM	0	19	0	5	25	0	0	0	0	1	0	0	50
	5:15 PM	0	21	1	2	36	0	0	0	0	2	0	5	67
	5:30 PM	0	30	1	2	31	0	0	0	0	5	0	1	70
	5:45 PM	0	44	10	0	53	0	0	0	0	4	0	3	114
	VOLUMES	0	230	21	25	283	0	0	0	0	16	0	13	606
	APPROACH %	0%	87%	8%	8%	90%	0%	0%	0%	0%	55%	0%	45%	
	APP/DEPART	263	/	249	314	/	311	0	/	46	29	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	114	12	9	145	0	0	0	0	12	0	9	312
	APPROACH %	0%	85%	9%	6%	92%	0%	0%	0%	0%	57%	0%	43%	
	PEAK HR FACTOR		0.578			0.741			0.000			0.750		0.661
	APP/DEPART	134	/	126	157	/	165	0	/	21	21	/	0	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	4	0	0	4
7:30 AM	0	1	0	0	1
7:45 AM	1	1	0	0	2
8:00 AM	0	2	0	0	2
8:15 AM	0	1	0	0	1
8:30 AM	0	0	0	0	0
8:45 AM	1	1	0	0	2
VOLUMES	2	10	0	0	12
BEGIN PEAK HR					
VOLUMES	1	4	0	0	
4:00 PM	1	1	0	0	2
4:15 PM	2	0	0	0	2
4:30 PM	1	1	0	0	2
4:45 PM	0	1	0	0	1
5:00 PM	2	1	0	0	3
5:15 PM	0	1	0	0	1
5:30 PM	2	1	0	0	3
5:45 PM	4	0	0	0	4
VOLUMES	12	6	0	0	18
BEGIN PEAK HR					
VOLUMES	8	3	0	0	



ALL PED + BIKE & SCOOTER

	N LEG	S LEG	E LEG	W LEG	TOTAL
7:00 AM	7	0	0	2	9
7:15 AM	2	0	3	8	13
7:30 AM	1	1	2	2	6
7:45 AM	0	0	4	1	5
8:00 AM	13	0	0	1	14
8:15 AM	7	1	2	13	23
8:30 AM	1	0	1	1	3
8:45 AM	3	0	0	0	3
TOTAL	34	2	12	28	76
BEGIN PEAK HR	7:45 AM				
4:00 PM	3	0	2	0	5
4:15 PM	0	0	2	0	2
4:30 PM	0	0	1	0	1
4:45 PM	0	2	0	2	4
5:00 PM	0	0	2	0	2
5:15 PM	1	0	2	0	3
5:30 PM	0	0	0	0	0
5:45 PM	4	1	2	0	7
TOTAL	8	3	11	2	24
BEGIN PEAK HR	5:00 PM				

PEDESTRIAN CROSSINGS

	N LEG	S LEG	E LEG	W LEG	TOTAL
7:00 AM	7	0	0	0	7
7:15 AM	2	0	2	0	4
7:30 AM	1	1	2	0	4
7:45 AM	0	0	1	0	1
8:00 AM	13	0	0	0	13
8:15 AM	7	1	2	0	10
8:30 AM	1	0	1	0	2
8:45 AM	3	0	0	0	3
TOTAL	34	2	8	0	44
BEGIN PEAK HR	21	1	4	0	26
4:00 PM	3	0	1	0	4
4:15 PM	0	0	1	0	1
4:30 PM	0	0	1	0	1
4:45 PM	0	2	0	0	2
5:00 PM	0	0	2	0	2
5:15 PM	1	0	2	0	3
5:30 PM	0	0	0	0	0
5:45 PM	4	1	1	0	6
TOTAL	8	3	8	0	19
BEGIN PEAK HR	5	1	5	0	11

BICYCLE & SCOOTER CROSSINGS

	NL	SL	EL	WL	TOTAL
7:00 AM	0	0	0	2	2
7:15 AM	0	0	1	8	9
7:30 AM	0	0	0	2	2
7:45 AM	0	0	3	1	4
8:00 AM	0	0	0	1	1
8:15 AM	0	0	0	13	13
8:30 AM	0	0	0	1	1
8:45 AM	0	0	0	0	0
TOTAL	0	0	4	28	32
BEGIN PEAK HR					
4:00 PM	0	0	1	0	1
4:15 PM	0	0	1	0	1
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	2	2
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	1	0	1
TOTAL	0	0	3	2	5
BEGIN PEAK HR					

INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jun 3, 25

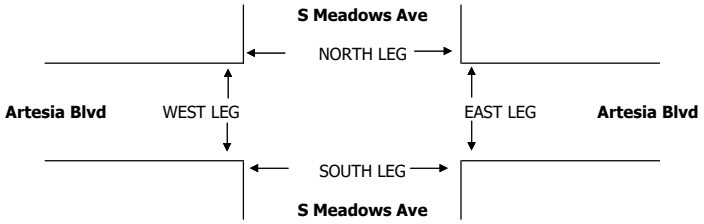
LOCATION: Mira Costa
NORTH & SOUTH: S Meadows Ave
EAST & WEST: Artesia Blvd

PROJECT #: SC5432
LOCATION #: 9
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND S Meadows Ave			SOUTHBOUND S Meadows Ave			EASTBOUND Artesia Blvd			WESTBOUND Artesia Blvd				U-TURNS				
	LANES:	NL X	NT X	NR 0	SL 0	ST X	SR 0	EL 1	ET 2	ER 0	WL X	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	0	0	5	0	4	4	105	0	0	197	3	318	0	0	0	0	0
	7:15 AM	0	0	0	4	0	6	11	193	0	0	312	25	551	0	0	1	0	1
	7:30 AM	0	0	0	6	0	8	18	111	0	0	291	27	461	0	0	0	0	0
	7:45 AM	0	0	0	9	0	10	11	155	0	0	292	36	513	0	0	0	0	0
	8:00 AM	0	0	0	29	0	12	10	193	0	0	303	29	576	0	0	0	0	0
	8:15 AM	0	0	1	24	0	22	15	267	2	0	364	35	730	0	0	0	0	0
	8:30 AM	0	0	0	28	0	17	16	163	0	0	319	49	592	0	0	1	0	1
	8:45 AM	0	0	1	18	0	17	14	175	2	0	324	35	586	0	0	0	0	0
	VOLUMES	0	0	2	123	0	96	99	1,362	4	0	2,402	239	4,329	0	0	2	0	2
	APPROACH %	0%	0%	100%	56%	0%	44%	7%	93%	0%	0%	91%	9%						
	APP/DEPART	2	/	338	219	/	4	1,467	/	1,487	2,641	/	2,500	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	0	0	2	99	0	68	55	798	4	0	1,310	148	2,485	0	0	1	0	
	APPROACH %	0%	0%	100%	59%	0%	41%	6%	93%	0%	0%	90%	10%						
	PEAK HR FACTOR		0.500			0.908			0.755			0.914		0.851					
	APP/DEPART	2	/	203	167	/	4	858	/	899	1,458	/	1,379	0					
PM	4:00 PM	0	0	1	38	0	12	12	283	1	0	221	17	585	0	0	1	0	1
	4:15 PM	0	0	2	19	0	15	25	316	2	0	222	10	611	0	0	0	0	0
	4:30 PM	0	0	0	41	0	22	20	281	0	0	224	19	607	0	0	1	0	1
	4:45 PM	0	0	2	27	0	25	12	293	1	0	202	21	583	0	0	0	0	0
	5:00 PM	0	0	0	39	0	21	15	286	2	0	203	20	586	0	0	2	0	2
	5:15 PM	0	0	3	29	0	22	26	271	1	0	204	28	584	0	0	0	0	0
	5:30 PM	0	0	0	42	0	26	18	285	1	0	178	15	565	0	0	0	0	0
	5:45 PM	0	0	1	33	0	13	17	306	2	0	221	13	606	0	0	1	0	1
	VOLUMES	0	0	9	268	0	156	145	2,321	10	0	1,675	143	4,732	0	0	5	0	5
	APPROACH %	0%	0%	100%	63%	0%	37%	6%	94%	0%	0%	92%	8%						
	APP/DEPART	9	/	288	424	/	10	2,481	/	2,598	1,818	/	1,836	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	0	0	4	126	0	83	72	1,176	5	0	851	70	2,390	0	0	3	0	
	APPROACH %	0%	0%	100%	60%	0%	40%	6%	94%	0%	0%	92%	8%						
	PEAK HR FACTOR		0.500			0.829			0.915			0.948		0.978					
	APP/DEPART	4	/	142	209	/	5	1,256	/	1,306	921	/	937	0					



		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		N LEG	S LEG	E LEG	W LEG	TOTAL	N LEG	S LEG	E LEG	W LEG	TOTAL	NL	SL	EL	WL	TOTAL
AM	7:00 AM	5	1	0	3	9	4	0	0	3	7	1	1	0	0	2
	7:15 AM	13	1	0	7	21	7	0	0	4	11	6	1	0	3	10
	7:30 AM	3	1	1	0	5	2	0	0	0	2	1	1	1	0	3
	7:45 AM	5	1	0	0	6	4	0	0	0	4	1	1	0	0	2
	8:00 AM	15	0	0	6	21	13	0	0	6	19	2	0	0	0	2
	8:15 AM	48	5	0	20	73	32	2	0	16	50	16	3	0	4	23
	8:30 AM	12	3	0	3	18	7	0	0	3	10	5	3	0	0	8
	8:45 AM	2	2	0	4	8	1	1	0	3	5	1	1	0	1	3
	TOTAL	103	14	1	43	161	70	3	0	35	108	33	11	1	8	53
	BEGIN PEAK HR			8:00 AM			53	3	0	28	84					
PM	4:00 PM	4	5	0	0	9	0	5	0	0	5	4	0	0	0	4
	4:15 PM	3	4	0	3	10	2	3	0	2	7	1	1	0	1	3
	4:30 PM	5	2	1	0	8	4	0	0	0	4	1	2	1	0	4
	4:45 PM	6	2	0	2	10	3	2	0	1	6	3	0	0	1	4
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	2	5	1	1	9	2	3	0	1	6	0	2	1	0	3
	5:30 PM	4	4	0	3	11	2	2	0	1	5	2	2	0	2	6
	5:45 PM	1	1	0	0	2	1	1	0	0	2	0	0	0	0	0
	TOTAL	25	23	2	9	59	14	16	0	5	35	11	7	2	4	24
	BEGIN PEAK HR			4:15 PM			9	5	0	3	17					

INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jun 3, 25

LOCATION: Mira Costa
NORTH & SOUTH: S Meadows Ave
EAST & WEST: Keats St

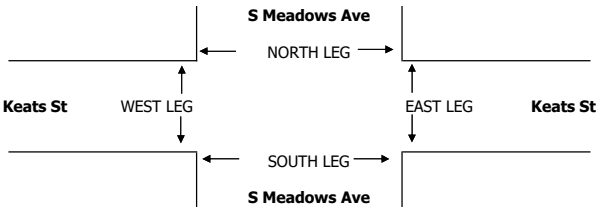
PROJECT #: SC5432
LOCATION #: 10
CONTROL: STOP ALL

NOTES: Queue NB/SB AM

AM / PM / MD / OTHER / OTHER

N ▲ S ▼ E ► ◄ W

		NORTHBOUND S Meadows Ave			SOUTHBOUND S Meadows Ave			EASTBOUND Keats St			WESTBOUND Keats St				U-TURNS				
	LANES:	NL 0	NT 1	NR X	SL X	ST 1	SR 0	EL 0	ET X	ER 0	WL X	WT X	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	1	6	0	0	8	4	3	0	11	0	0	0	33	0	0	0	0	0
	7:15 AM	2	18	0	0	25	13	14	0	14	0	0	0	86	0	1	0	0	1
	7:30 AM	5	24	0	0	7	7	6	0	3	0	0	0	52	0	2	2	0	4
	7:45 AM	8	26	0	0	17	12	17	0	3	0	0	0	83	0	0	0	0	0
	8:00 AM	2	24	0	0	29	23	19	0	10	0	0	0	107	0	0	0	0	0
	8:15 AM	10	27	0	0	24	47	33	0	30	0	0	0	171	0	0	0	0	0
	8:30 AM	11	30	0	0	22	10	12	0	13	0	0	0	98	0	1	0	0	1
	8:45 AM	11	21	0	0	18	18	10	0	9	0	0	0	87	0	0	0	0	0
	VOLUMES	50	176	0	0	150	134	114	0	93	0	0	0	723	0	4	2	0	6
	APPROACH %	22%	78%	0%	0%	52%	47%	55%	0%	44%	0%	0%	0%						
	APP/DEPART	226	/	294	288	/	243	209	/	0	0	/	186	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	34	102	0	0	93	98	74	0	62	0	0	0	464	0	1	0	0	
	APPROACH %	25%	75%	0%	0%	48%	51%	54%	0%	46%	0%	0%	0%						
	PEAK HR FACTOR		0.829			0.676			0.540			0.000		0.678					
	APP/DEPART	136	/	177	192	/	155	136	/	0	0	/	132	0					
PM	4:00 PM	4	16	0	0	27	27	18	0	20	0	0	0	112	1	0	0	0	1
	4:15 PM	9	21	0	0	28	17	14	0	18	0	0	0	107	1	1	0	0	2
	4:30 PM	10	24	0	0	35	28	23	0	15	0	0	0	135	0	1	0	0	1
	4:45 PM	4	24	0	0	27	20	17	0	16	0	0	0	108	0	3	0	0	3
	5:00 PM	1	26	0	0	39	17	13	0	15	0	0	0	111	0	0	0	0	0
	5:15 PM	3	32	0	0	55	22	25	0	29	0	0	0	166	0	0	0	0	0
	5:30 PM	7	30	0	0	34	11	7	0	15	0	0	0	104	1	0	0	0	1
	5:45 PM	2	21	0	0	21	15	8	0	18	0	0	0	85	1	1	0	0	2
	VOLUMES	40	194	0	0	266	157	125	0	146	0	0	0	938	4	6	0	0	10
	APPROACH %	17%	82%	0%	0%	62%	37%	46%	0%	54%	0%	0%	0%						
	APP/DEPART	238	/	325	429	/	416	271	/	0	0	/	197	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	18	106	0	0	156	87	78	0	75	0	0	0	524	0	4	0	0	
	APPROACH %	15%	85%	0%	0%	63%	35%	51%	0%	49%	0%	0%	0%						
	PEAK HR FACTOR		0.886			0.802			0.708			0.000		0.789					
	APP/DEPART	124	/	188	247	/	231	153	/	0	0	/	105	0					



		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		N LEG	S LEG	E LEG	W LEG	TOTAL	N LEG	S LEG	E LEG	W LEG	TOTAL	NL	SL	EL	WL	TOTAL
AM	7:00 AM	4	2	1	1	8	4	1	0	1	6	0	1	1	0	2
	7:15 AM	20	20	1	0	41	19	18	0	0	37	1	2	1	0	4
	7:30 AM	5	10	0	2	17	4	6	0	2	12	1	4	0	0	5
	7:45 AM	2	5	0	3	10	2	4	0	3	9	0	1	0	0	1
	8:00 AM	6	12	3	1	22	6	6	0	0	12	0	6	3	1	10
	8:15 AM	53	94	0	1	148	46	73	0	1	120	7	21	0	0	28
	8:30 AM	1	3	0	3	7	1	2	0	3	6	0	1	0	0	1
	8:45 AM	1	0	1	3	5	0	0	0	3	3	1	0	1	0	2
	TOTAL	92	146	6	14	258	82	110	0	13	205	10	36	6	1	53
	BEGIN PEAK HR	8:00 AM					53	81	0	7	141					
PM	4:00 PM	8	22	2	2	34	6	19	0	2	27	2	3	2	0	7
	4:15 PM	11	6	0	4	21	10	3	0	3	16	1	3	0	1	5
	4:30 PM	18	17	1	6	42	17	14	0	5	36	1	3	1	1	6
	4:45 PM	4	5	0	1	10	4	3	0	1	8	0	2	0	0	2
	5:00 PM	1	1	0	1	3	0	1	0	1	2	1	0	0	0	1
	5:15 PM	7	8	0	3	18	7	0	0	1	8	0	8	0	2	10
	5:30 PM	1	2	0	3	6	1	2	0	0	3	0	0	0	3	3
	5:45 PM	3	4	0	2	9	3	3	0	0	6	0	1	0	2	3
	TOTAL	53	65	3	22	143	48	45	0	13	106	5	20	3	9	37
	BEGIN PEAK HR	4:30 PM					28	18	0	8	54					

INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jun 3, 25

LOCATION: Mira Costa
NORTH & SOUTH: S Prospect Ave
EAST & WEST: Artesia Blvd

PROJECT #: SC5432
LOCATION #: 11
CONTROL: SIGNAL

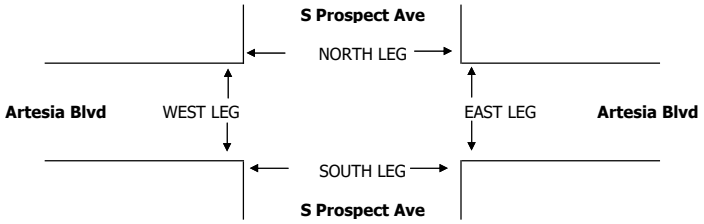
NOTES: Queue WB AM, EB PM

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND S Prospect Ave			SOUTHBOUND S Prospect Ave			EASTBOUND Artesia Blvd			WESTBOUND Artesia Blvd			
	LANES:	NL 0	NT 1	NR 1	SL 0	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	16	7	10	3	6	3	4	97	9	10	177	7	349
	7:15 AM	15	11	39	5	4	4	4	158	8	24	270	15	557
	7:30 AM	25	8	31	3	5	4	4	94	8	20	264	21	487
	7:45 AM	27	17	28	6	7	3	6	129	11	25	262	19	540
	8:00 AM	28	17	25	11	6	6	9	161	24	24	244	27	582
	8:15 AM	27	18	41	5	10	17	14	233	23	41	320	32	781
	8:30 AM	57	22	62	2	6	6	6	118	28	33	276	35	651
	8:45 AM	31	14	37	11	4	5	7	149	12	35	271	28	604
	VOLUMES	226	114	273	46	48	48	54	1,139	123	212	2,084	184	4,588
	APPROACH %	37%	19%	45%	32%	34%	34%	4%	85%	9%	8%	83%	7%	
	APP/DEPART	613	/	352	142	/	383	1,337	/	1,474	2,496	/	2,379	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	143	71	165	29	26	34	36	661	87	133	1,111	122	2,637
	APPROACH %	38%	19%	44%	33%	29%	38%	5%	83%	11%	10%	81%	9%	
	PEAK HR FACTOR		0.672			0.695			0.728			0.865		0.837
	APP/DEPART	379	/	229	89	/	246	792	/	866	1,377	/	1,296	0
PM	4:00 PM	35	8	39	15	20	15	9	247	34	29	180	8	639
	4:15 PM	35	10	49	16	16	11	5	274	42	36	213	1	708
	4:30 PM	32	7	35	13	31	10	9	259	42	35	201	5	679
	4:45 PM	33	11	31	17	23	9	11	248	49	34	184	3	653
	5:00 PM	35	11	37	25	27	6	9	250	47	25	194	7	673
	5:15 PM	22	6	37	12	21	9	4	239	42	27	189	4	612
	5:30 PM	33	8	30	18	20	6	10	242	56	34	185	4	646
	5:45 PM	33	3	41	13	15	9	5	277	39	31	195	8	669
	VOLUMES	258	64	299	129	173	75	62	2,036	351	251	1,541	40	5,324
	APPROACH %	42%	10%	48%	34%	46%	20%	2%	82%	14%	14%	84%	2%	
	APP/DEPART	621	/	166	377	/	775	2,486	/	2,472	1,840	/	1,911	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	135	39	152	71	97	36	34	1,031	180	130	792	16	2,727
	APPROACH %	41%	12%	47%	35%	48%	18%	3%	82%	14%	14%	84%	2%	
	PEAK HR FACTOR		0.867			0.879			0.964			0.936		0.955
	APP/DEPART	326	/	89	204	/	407	1,257	/	1,256	940	/	975	0

U-TURNS

	NB 0	SB 0	EB 0	WB 0	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	2	2	4
7:30 AM	0	0	4	2	6
7:45 AM	0	0	7	1	8
8:00 AM	0	0	1	1	2
8:15 AM	0	0	2	5	7
8:30 AM	0	0	2	2	4
8:45 AM	0	0	3	3	6
VOLUMES	0	0	21	16	37
BEGIN PEAK HR: 8:00 AM	0	0	8	11	
4:00 PM	0	0	7	3	10
4:15 PM	0	0	5	1	6
4:30 PM	0	0	2	0	2
4:45 PM	0	0	1	1	2
5:00 PM	0	0	4	0	4
5:15 PM	0	0	8	0	8
5:30 PM	0	0	5	1	6
5:45 PM	0	0	5	2	7
VOLUMES	0	0	37	8	45
BEGIN PEAK HR: 4:15 PM	0	0	12	2	



ALL PED + BIKE & SCOOTER

	N LEG	S LEG	E LEG	W LEG	TOTAL
7:00 AM	4	1	3	3	11
7:15 AM	5	1	1	1	8
7:30 AM	4	1	4	1	10
7:45 AM	11	1	5	3	20
8:00 AM	5	2	14	3	24
8:15 AM	6	5	38	7	56
8:30 AM	2	5	4	5	16
8:45 AM	1	1	2	4	8
TOTAL	38	17	71	27	153
BEGIN PEAK HR: 8:00 AM					
4:00 PM	1	0	3	6	10
4:15 PM	4	5	2	2	13
4:30 PM	6	2	3	4	15
4:45 PM	5	1	2	2	10
5:00 PM	2	0	0	3	5
5:15 PM	4	2	2	0	8
5:30 PM	0	4	3	3	10
5:45 PM	2	0	1	1	4
TOTAL	24	14	16	21	75
BEGIN PEAK HR: 4:15 PM					

PEDESTRIAN CROSSINGS

	N LEG	S LEG	E LEG	W LEG	TOTAL
7:00 AM	3	0	2	3	8
7:15 AM	3	0	0	1	4
7:30 AM	1	0	1	0	2
7:45 AM	9	1	2	3	15
8:00 AM	5	2	5	3	15
8:15 AM	3	2	2	5	12
8:30 AM	1	3	1	3	8
8:45 AM	0	1	0	2	3
TOTAL	25	9	13	20	67
BEGIN PEAK HR: 8:00 AM	9	8	8	13	38
4:00 PM	0	0	0	4	4
4:15 PM	3	4	1	2	10
4:30 PM	4	0	0	2	6
4:45 PM	2	1	1	1	5
5:00 PM	2	0	0	2	4
5:15 PM	4	2	2	0	8
5:30 PM	0	1	1	2	4
5:45 PM	1	0	0	0	1
TOTAL	16	8	5	13	42
BEGIN PEAK HR: 4:15 PM	11	5	2	7	25

BICYCLE & SCOOTER CROSSINGS

	NL	SL	EL	WL	TOTAL
7:00 AM	1	1	1	0	3
7:15 AM	2	1	1	0	4
7:30 AM	3	1	3	1	8
7:45 AM	2	0	3	0	5
8:00 AM	0	0	9	0	9
8:15 AM	3	3	36	2	44
8:30 AM	1	2	3	2	8
8:45 AM	1	0	2	2	5
TOTAL	13	8	58	7	86
BEGIN PEAK HR					
4:00 PM	1	0	3	2	6
4:15 PM	1	1	1	0	3
4:30 PM	2	2	3	2	9
4:45 PM	3	0	1	1	5
5:00 PM	0	0	0	1	1
5:15 PM	0	0	0	0	0
5:30 PM	0	3	2	1	6
5:45 PM	1	0	1	1	3
TOTAL	8	6	11	8	33

INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jun 3, 25

LOCATION: Mira Costa
NORTH & SOUTH: Stanford Ave
EAST & WEST: Artesia Blvd

PROJECT #: SC5432
LOCATION #: 12
CONTROL: STOP N

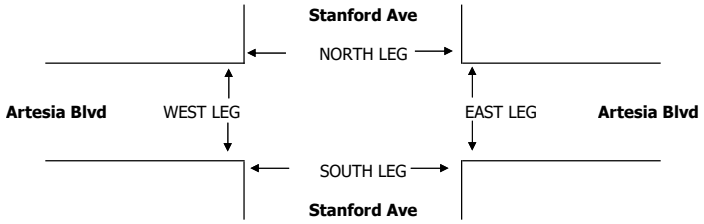
NOTES:

AM / PM / MD / OTHER / OTHER — N / W / E / S

		NORTHBOUND Stanford Ave			SOUTHBOUND Stanford Ave			EASTBOUND Artesia Blvd			WESTBOUND Artesia Blvd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	2	0	3	1	0	3	5	107	5	1	195	2	324
	7:15 AM	0	0	4	2	0	28	24	159	1	2	307	1	528
	7:30 AM	1	0	3	1	0	14	14	122	1	4	304	1	465
	7:45 AM	0	0	5	0	0	3	10	155	3	2	325	0	503
	8:00 AM	0	0	13	1	1	15	24	193	3	12	317	2	581
	8:15 AM	0	0	5	2	0	32	33	229	3	5	365	2	676
	8:30 AM	3	0	4	0	0	23	16	207	5	6	342	2	608
	8:45 AM	1	0	7	2	0	5	5	197	5	3	353	0	578
	VOLUMES	7	0	44	9	1	123	131	1,369	26	35	2,508	10	4,277
	APPROACH %	14%	0%	86%	7%	1%	92%	9%	89%	2%	1%	98%	0%	
	APP/DEPART	51	/	141	133	/	62	1,530	/	1,432	2,563	/	2,642	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	4	0	29	5	1	75	78	826	16	26	1,377	6	2,453
	APPROACH %	12%	0%	88%	6%	1%	93%	8%	90%	2%	2%	97%	0%	
	PEAK HR FACTOR		0.635			0.596			0.863			0.950		0.903
	APP/DEPART	33	/	84	81	/	43	922	/	868	1,417	/	1,458	0
PM	4:00 PM	1	0	1	1	0	4	2	292	11	4	230	1	547
	4:15 PM	1	0	3	0	0	0	1	335	7	6	237	1	591
	4:30 PM	2	0	3	2	0	3	1	319	9	10	231	1	581
	4:45 PM	0	0	3	1	0	2	1	308	5	5	219	0	544
	5:00 PM	2	0	5	0	0	1	0	309	10	8	219	1	555
	5:15 PM	2	0	1	1	0	1	1	311	5	8	219	0	549
	5:30 PM	1	0	4	0	0	1	0	303	11	6	206	0	532
	5:45 PM	1	0	2	0	0	1	0	321	12	6	221	0	564
	VOLUMES	10	0	22	5	0	13	6	2,498	70	53	1,782	4	4,477
	APPROACH %	31%	0%	69%	28%	0%	72%	0%	97%	3%	3%	96%	0%	
	APP/DEPART	32	/	10	18	/	123	2,577	/	2,536	1,850	/	1,808	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	5	0	14	3	0	6	3	1,271	31	29	906	3	2,279
	APPROACH %	26%	0%	74%	33%	0%	67%	0%	97%	2%	3%	96%	0%	
	PEAK HR FACTOR		0.679			0.450			0.953			0.963		0.962
	APP/DEPART	19	/	6	9	/	60	1,307	/	1,294	944	/	919	0

U-TURNS

	NB	SB	EB	WB	TTL
	0	0	0	0	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	2	0	2
7:30 AM	0	0	0	2	2
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	4	4
8:15 AM	0	0	2	1	3
8:30 AM	0	0	0	2	2
8:45 AM	0	0	0	1	1
	0	0	4	10	14
	0	0	2	8	
4:00 PM	0	0	0	3	3
4:15 PM	0	0	0	1	1
4:30 PM	0	0	0	1	1
4:45 PM	0	0	2	1	3
5:00 PM	0	0	0	3	3
5:15 PM	0	0	1	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	2	2
	0	0	3	11	14
	0	0	2	6	



		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		N LEG	S LEG	E LEG	W LEG	TOTAL	N LEG	S LEG	E LEG	W LEG	TOTAL	NL	SL	EL	WL	TOTAL
AM	7:00 AM	4	1	0	0	5	3	0	0	0	3	1	1	0	0	2
	7:15 AM	19	1	0	0	20	14	0	0	0	14	5	1	0	0	6
	7:30 AM	12	2	0	0	14	10	1	0	0	11	2	1	0	0	3
	7:45 AM	10	1	0	0	11	9	1	0	0	10	1	0	0	0	1
	8:00 AM	9	1	0	0	10	6	1	0	0	7	3	0	0	0	3
	8:15 AM	20	0	0	0	20	17	0	0	0	17	3	0	0	0	3
	8:30 AM	7	5	0	0	12	5	2	0	0	7	2	3	0	0	5
	8:45 AM	4	2	0	0	6	2	2	0	0	4	2	0	0	0	2
	TOTAL	85	13	0	0	98	66	7	0	0	73	19	6	0	0	25
	BEGIN PEAK HR			8:00 AM			30	5	0	0	35					
PM	4:00 PM	3	2	0	0	5	1	2	0	0	3	2	0	0	0	2
	4:15 PM	3	3	0	0	6	2	2	0	0	4	1	1	0	0	2
	4:30 PM	4	0	0	0	4	3	0	0	0	3	1	0	0	0	1
	4:45 PM	7	2	0	0	9	4	1	0	0	5	3	1	0	0	4
	5:00 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	5:15 PM	1	3	0	0	4	1	2	0	0	3	0	1	0	0	1
	5:30 PM	2	3	0	0	5	1	3	0	0	4	1	0	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	21	13	0	0	34	12	10	0	0	22	9	3	0	0	12
	BEGIN PEAK HR			4:15 PM			9	3	0	0	12					

Appendix B—Parking Utilization Counts

Parking Occupancy Study Tuesday, 06/03/25
Prepared by AimTD LLC cs@aimtd.com

#	Street	From	To	Side of Street	Inventory Regular	Inventory Visitor	Inventory Staff	Inventory Disabled	Inventory Student	Inventory Carpool	8AM-Regular	8AM- Visitor	8AM- Staff	8AM- Disabled	8AM- Student	8AM- Carpool	9AM- Regular	9AM- Visitor	9AM- Staff	9AM- Disabled	9AM- Student	9AM- Carpool
1	S. Meadows Ave.	Keats St.	Artesia Blvd	East	36	0	0	0	0	0	43	0	0	0	0	0	43	0	0	0	0	0
2	S. Meadows Ave.	Keats St.	Artesia Blvd	West	43	0	0	0	0	0	35	0	0	0	0	0	36	0	0	0	0	0
3	Artesia Blvd	Ford Ave.	S. Meadows Ave.	North	43	0	0	0	0	0	39	0	0	0	0	0	42	0	0	0	0	0
4	S. Peck Ave	Artesia Blvd.	Voorhees Ave.	East	42	0	0	0	0	0	36	0	0	0	0	0	34	0	0	0	0	0
5	S. Peck Ave	Artesia Blvd.	Voorhees Ave.	West	34	0	0	0	0	0	23	0	0	0	0	0	28	0	0	0	0	0
6	Parking Lot 4	N/A	N/A	N/A	1	0	62	7	0	0	1	0	49	5	0	0	1	0	50	5	0	0
7	Parking Lot 5	N/A	N/A	N/A	49	0	99	7	132	10	39	0	57	2	131	9	42	0	79	3	132	10
8	Parking Lot 6	N/A	N/A	N/A	0	10	55	5	0	0	0	5	30	1	0	0	0	8	48	3	0	0

#	Street	From	To	Side of Street	10AM Regular	10AM Visitor	10AM Staff	10AM Disabled	10AM Student	10AM Carpool	11AM Regular	11AM Visitor	11AM Staff	11AM Disabled	11AM Student	11AM Carpool	12PM Regular	12PM Visitor	12PM Staff	12PM Disabled	12PM Student	12PM Carpool
1	S. Meadows Ave.	Keats St.	Artesia Blvd	East	43	0	0	0	0	0	43	0	0	0	0	0	42	0	0	0	0	0
2	S. Meadows Ave.	Keats St.	Artesia Blvd	West	36	0	0	0	0	0	36	0	0	0	0	0	36	0	0	0	0	0
3	Artesia Blvd	Ford Ave.	S. Meadows Ave.	North	41	0	0	0	0	0	43	0	0	0	0	0	41	0	0	0	0	0
4	S. Peck Ave	Artesia Blvd.	Voorhees Ave.	East	34	0	0	0	0	0	36	0	0	0	0	0	33	0	0	0	0	0
5	S. Peck Ave	Artesia Blvd.	Voorhees Ave.	West	27	0	0	0	0	0	28	0	0	0	0	0	27	0	0	0	0	0
6	Parking Lot 4	N/A	N/A	N/A	1	0	53	4	0	0	1	0	52	5	0	0	1	0	53	6	0	0
7	Parking Lot 5	N/A	N/A	N/A	41	0	77	3	132	10	47	0	78	3	131	9	45	0	76	3	120	0
8	Parking Lot 6	N/A	N/A	N/A	0	8	50	4	0	0	0	8	50	3	0	0	0	9	50	3	0	0

#	Street	From	To	Side of Street	1PM Regular	1PM Visitor	1PM Staff	1PM Disabled	1PM Student	1PM Carpool	2PM Regular	2PM Visitor	2PM Staff	2PM Disabled	2PM Student	2PM Carpool	3PM Regular	3PM Visitor	3PM Staff	3PM Disabled	3PM Student	3PM Carpool
1	S. Meadows Ave.	Keats St.	Artesia Blvd	East	34	0	0	0	0	0	30	0	0	0	0	0	19	0	0	0	0	0
2	S. Meadows Ave.	Keats St.	Artesia Blvd	West	25	0	0	0	0	0	24	0	0	0	0	0	16	0	0	0	0	0
3	Artesia Blvd	Ford Ave.	S. Meadows Ave.	North	30	0	0	0	0	0	28	0	0	0	0	0	12	0	0	0	0	0
4	S. Peck Ave	Artesia Blvd.	Voorhees Ave.	East	18	0	0	0	0	0	16	0	0	0	0	0	12	0	0	0	0	0
5	S. Peck Ave	Artesia Blvd.	Voorhees Ave.	West	20	0	0	0	0	0	10	0	0	0	0	0	7	0	0	0	0	0
6	Parking Lot 4	N/A		N/A	1	0	45	4	0	0	1	0	48	4	0	0	1	0	58	4	0	0
7	Parking Lot 5	N/A		N/A	39	0	76	3	107	7	20	0	76	2	47	2	7	0	71	1	15	0
8	Parking Lot 6	N/A		N/A	0	7	50	2	0	0	0	7	45	2	0	0	0	4	37	3	0	0

#	Street	From	To	Side of Street	4PM Regular	4PM Visitor	4PM Staff	4PM Disabled	4PM Student	4PM Carpool	5PM Regular	5PM Visitor	5PM Staff	5PM Disabled	5PM Student	5PM Carpool
1	S. Meadows Ave.	Keats St.	Artesia Blvd	East	27	0	0	0	0	0	25	0	0	0	0	0
2	S. Meadows Ave.	Keats St.	Artesia Blvd	West	14	0	0	0	0	0	18	0	0	0	0	0
3	Artesia Blvd	Ford Ave.	S. Meadows Ave.	North	2	0	0	0	0	0	2	0	0	0	0	0
4	S. Peck Ave	Artesia Blvd.	Voorhees Ave.	East	6	0	0	0	0	0	2	0	0	0	0	0
5	S. Peck Ave	Artesia Blvd.	Voorhees Ave.	West	9	0	0	0	0	0	7	0	0	0	0	0
6	Parking Lot 4	N/A		N/A	1	0	27	0	0	0	1	0	26	0	0	0
7	Parking Lot 5	N/A		N/A	2	0	22	1	14	0	1	0	15	0	11	0
8	Parking Lot 6	N/A		N/A	0	2	18	0	0	0	0	1	14	0	0	0

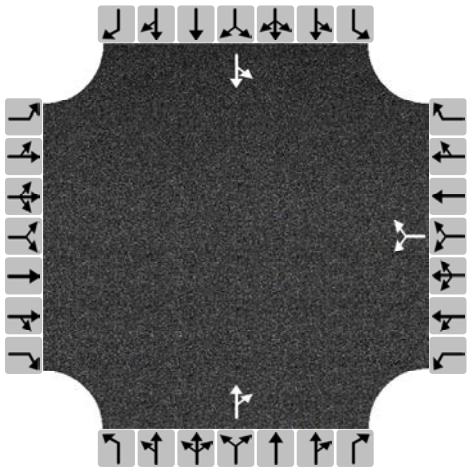
Appendix C—HCS Reports [2025 Existing]

HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Vorhees Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Vorhees Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				8		14		201	10	26	194	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				24			229			239		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.021			0.204			0.213		
Final Departure Headway, h_d (s)				4.61			4.20			4.24		
Final Degree of Utilization, x				0.031			0.267			0.282		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.61			2.20			2.24		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				24			229			239		
Capacity (veh/h)				780			858			849		
95% Queue Length, Q_{95} (veh)				0.1			1.1			1.2		
95% Queue Length, Q_{95} (ft)				2.5			27.9			30.5		
Control Delay (s/veh)				7.8			8.7			8.9		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.8		A	8.7		A	8.9		A
Intersection Delay (s/veh) | LOS	8.8						A					

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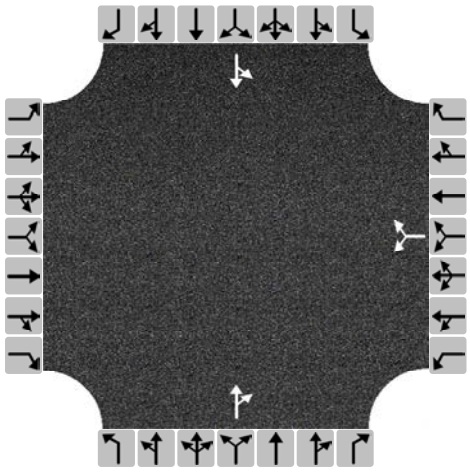
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Ruhland Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Ruhland Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				19		15		196	15	10	182	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				37			229			209		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.033			0.204			0.186		
Final Departure Headway, h_d (s)				4.71			4.19			4.26		
Final Degree of Utilization, x				0.048			0.267			0.247		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.71			2.19			2.26		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				37			229			209		
Capacity (veh/h)				764			859			845		
95% Queue Length, Q_{95} (veh)				0.2			1.1			1.0		
95% Queue Length, Q_{95} (ft)				5.1			27.9			25.4		
Control Delay (s/veh)				7.9			8.7			8.7		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.9		A	8.7		A	8.7		A
Intersection Delay (s/veh) | LOS	8.6						A					

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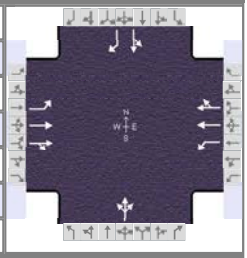
HCS Signalized Intersection Results Summary

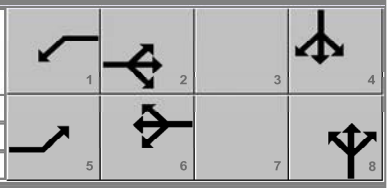
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	S Peck Ave & Artesia Blvd	File Name	S Peck Ave & Artesia Blvd.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	141	674	53	21	1149	122	117	92	8	71	24	127

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.0	2.9		70.2	11.6	16.2	0.0					
Yellow	4.0	0.0		4.0	4.0	4.0	0.0					
Red	0.0	0.0		0.0	0.0	0.0	0.0					



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		12.0		11.0
Phase Duration, s	9.9	77.1	7.0	74.2		20.2		15.6
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.0		3.2
Queue Clearance Time (g_s), s	5.6		2.5			15.9		11.3
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0		0.4		0.4
Phase Call Probability	0.99		0.50			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	141	368	359	21	645	626		217			95	127
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1851	1810	1900	1836		1838			1832	1610
Queue Service Time (g_s), s	3.6	11.3	11.3	0.5	25.6	25.7		13.9			5.9	9.3
Cycle Queue Clearance Time (g_c), s	3.6	11.3	11.3	0.5	25.6	25.7		13.9			5.9	9.3
Green Ratio (*g/C*)	0.64	0.61	0.61	0.61	0.58	0.58		0.14			0.10	0.10
Capacity (*c*), veh/h	314	1158	1128	474	1111	1074		249			177	156
Volume-to-Capacity Ratio (*X*)	0.450	0.318	0.318	0.044	0.581	0.583		0.873			0.535	0.814
Back of Queue (*Q*), ft/ln (95 th percentile)	60	205	201	9	410	401		268			123	174
Back of Queue (*Q*), veh/ln (95 th percentile)	2.4	8.2	8.0	0.4	16.4	16.0		10.7			4.9	7.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	0.00
Uniform Delay (d_1), s/veh	12.7	11.4	11.4	9.7	15.7	15.7		50.9			51.6	53.1
Incremental Delay (d_2), s/veh	0.4	0.7	0.7	0.0	2.2	2.3		3.9			0.9	4.0
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Control Delay (*d*), s/veh	13.1	12.1	12.1	9.7	17.9	18.0		54.8			52.6	57.1
Level of Service (LOS)	B	B	B	A	B	B		D			D	E
Approach Delay, s/veh / LOS	12.3	B		17.8	B		54.8	D		55.2	E	
Intersection Delay, s/veh / LOS	22.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.66	B	1.89	B	2.32	B	2.31	B
Bicycle LOS Score / LOS	1.20	A	1.55	B	0.85	A	0.85	A

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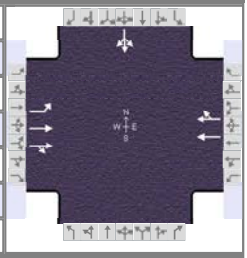
HCS Signalized Intersection Results Summary

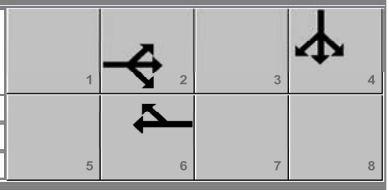
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd…	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	S Meadows Ave & Artesi…	File Name	S Meadows Ave & Artesia Blvd_Exisitng Year No…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	55	798	4		1310	148				99	0	68

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	98.4	13.6	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6				4
Case Number		6.0		8.0				12.0
Phase Duration, s		102.4		102.4				17.6
Change Period, (*Y+R c*), s		4.0		4.0				4.0
Max Allow Headway (*MAH*), s		0.0		0.0				3.2
Queue Clearance Time (*g s*), s								13.4
Green Extension Time (*g e*), s		0.0		0.0				0.2
Phase Call Probability								1.00
Max Out Probability								0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6	16				7	4	14
Adjusted Flow Rate (*v*), veh/h	55	401	401		739	719					167	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	370	1900	1897		1900	1832					1723	
Queue Service Time (*g s*), s	7.6	5.8	5.8		21.7	14.0					11.4	
Cycle Queue Clearance Time (*g c*), s	29.3	5.8	5.8		21.7	14.0					11.4	
Green Ratio (*g/C*)	0.82	0.82	0.82		0.82	0.82					0.11	
Capacity (*c*), veh/h	297	1558	1555		1558	1502					195	
Volume-to-Capacity Ratio (*X*)	0.185	0.258	0.258		0.474	0.479					0.855	
Back of Queue (*Q*), ft/ln (95 th percentile)	30	68	68		164	163					220	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.2	2.7	2.7		6.6	6.5					8.8	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00		0.00	0.00					0.00	
Uniform Delay (*d 1*), s/veh	9.2	2.5	2.5		3.2	3.2					52.2	
Incremental Delay (*d 2*), s/veh	1.4	0.4	0.4		1.0	1.1					4.3	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0		0.0	0.0					0.0	
Control Delay (*d*), s/veh	10.6	2.9	2.9		4.2	4.3					56.5	
Level of Service (LOS)	B	A	A		A	A					E	
Approach Delay, s/veh / LOS	3.4	A		4.3	A		0.0			56.5	E	
Intersection Delay, s/veh / LOS	7.5						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.31	A	1.60	B	2.15	B	2.32	B
Bicycle LOS Score / LOS	1.19	A	1.69	B			0.76	A

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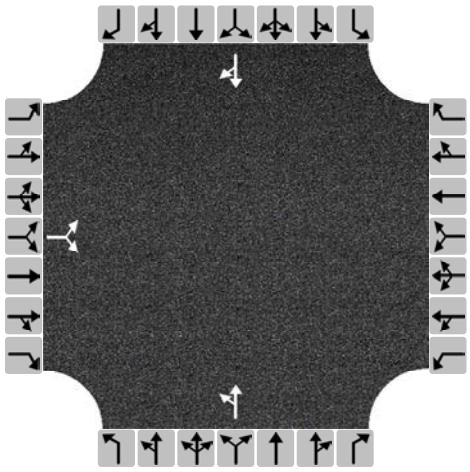
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	8:00-8:45am
Project Description	
Intersection	S Meadows Ave & Keats St
Jurisdiction	Manhattan Beach, CA
East/West Street	Keats St
North/South Street	S Meadows Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	74		62				34	102			93	98
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	148						148			208		
Percent Heavy Vehicles	2						2			2		
Initial Departure Headway, h_d (s)	3.20						3.20			3.20		
Initial Degree of Utilization, x	0.131						0.131			0.185		
Final Departure Headway, h_d (s)	4.56						4.57			4.16		
Final Degree of Utilization, x	0.187						0.188			0.240		
Move-Up Time, m (s)	2.0						2.0			2.0		
Service Time, t_s (s)	2.56						2.57			2.16		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	148						148			208		
Capacity (veh/h)	790						788			865		
95% Queue Length, Q_{95} (veh)	0.7						0.7			0.9		
95% Queue Length, Q_{95} (ft)	17.8						17.8			22.9		
Control Delay (s/veh)	8.6						8.6			8.5		
Level of Service, LOS	A						A			A		
Approach Delay (s/veh) | LOS	8.6	A					8.6	A		8.5	A	
Intersection Delay (s/veh) | LOS	8.6						A					

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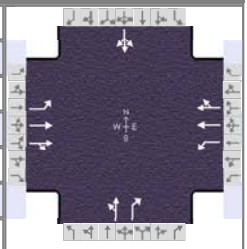
HCS Signalized Intersection Results Summary

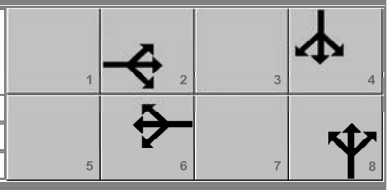
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	S Prospect Ave & Artesi…	File Name	S Prospect Ave & Artesia Blvd_Exisitng Year No P…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	36	661	87	133	1111	122	143	71	165	29	26	34

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	92.9	19.1	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		96.9		96.9		23.1		23.1
Change Period, (*Y+R c*), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (*g s*), s						18.7		7.4
Green Extension Time (*g e*), s		0.0		0.0		0.4		0.8
Phase Call Probability						1.00		1.00
Max Out Probability						0.94		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	36	381	367	133	627	606		214	165		89	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	459	1900	1822	725	1900	1834		1505	1610		1668	
Queue Service Time (*g s*), s	3.4	6.8	6.8	7.6	13.3	13.4		11.3	11.5		0.0	
Cycle Queue Clearance Time (*g c*), s	16.8	6.8	6.8	14.4	13.3	13.4		16.7	11.5		5.4	
Green Ratio (*g/C*)	0.77	0.77	0.77	0.77	0.77	0.77		0.16	0.16		0.16	
Capacity (*c*), veh/h	364	1471	1411	580	1471	1420		290	256		305	
Volume-to-Capacity Ratio (*X*)	0.099	0.259	0.260	0.229	0.426	0.427		0.739	0.644		0.292	
Back of Queue (*Q*), ft/ln (95 th percentile)	16	98	94	51	192	187		273	207		105	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.7	3.9	3.8	2.0	7.7	7.5		10.9	8.3		4.2	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	
Uniform Delay (*d 1*), s/veh	7.4	3.8	3.8	5.9	4.6	4.6		49.5	47.3		44.7	
Incremental Delay (*d 2*), s/veh	0.5	0.4	0.4	0.9	0.9	0.9		6.4	2.4		0.2	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Control Delay (*d*), s/veh	8.0	4.3	4.3	6.8	5.5	5.5		55.9	49.7		44.9	
Level of Service (LOS)	A	A	A	A	A	A		E	D		D	
Approach Delay, s/veh / LOS	4.4	A		5.6	A		53.2	D		44.9	D	
Intersection Delay, s/veh / LOS	13.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.84	B	1.62	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.13	A	1.61	B	1.11	A	0.63	A

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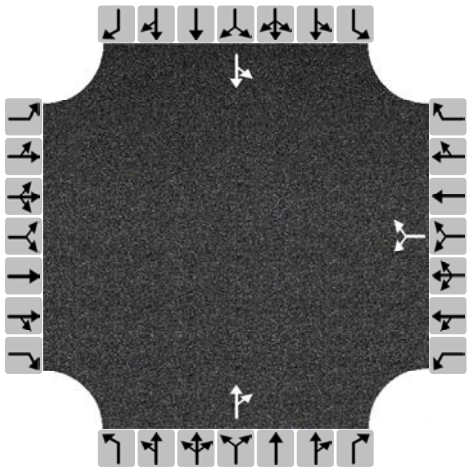
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	5:00-5:45pm
Project Description	
Intersection	S Peck Ave & Voorhees Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Voorhees Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				12		9		114	12	9	145	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				23			137			167		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.020			0.122			0.149		
Final Departure Headway, h_d (s)				4.43			4.09			4.13		
Final Degree of Utilization, x				0.028			0.156			0.192		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.43			2.09			2.13		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				23			137			167		
Capacity (veh/h)				812			880			872		
95% Queue Length, Q_{95} (veh)				0.1			0.6			0.7		
95% Queue Length, Q_{95} (ft)				2.5			15.2			17.8		
Control Delay (s/veh)				7.6			7.8			8.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.6		A	7.8		A	8.1		A
Intersection Delay (s/veh) | LOS	8.0						A					

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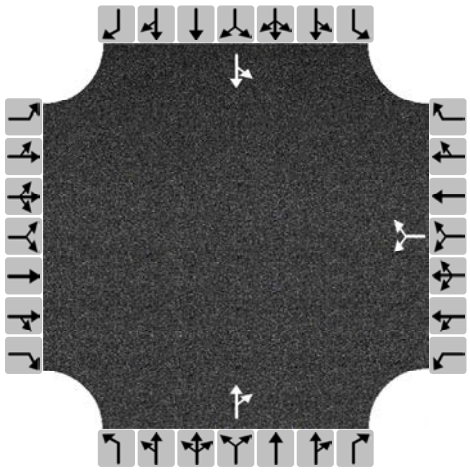
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	5:00-5:45pm
Project Description	
Intersection	S Peck Ave & Ruhland Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Ruhland Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				9		5		130	11	10	143	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				15			153			166		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.014			0.136			0.148		
Final Departure Headway, h_d (s)				4.52			4.08			4.13		
Final Degree of Utilization, x				0.019			0.174			0.191		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.52			2.08			2.13		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				15			153			166		
Capacity (veh/h)				796			882			872		
95% Queue Length, Q_{95} (veh)				0.1			0.6			0.7		
95% Queue Length, Q_{95} (ft)				2.5			15.2			17.8		
Control Delay (s/veh)				7.6			7.9			8.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.6		A	7.9		A	8.1		A
Intersection Delay (s/veh) | LOS	8.0						A					

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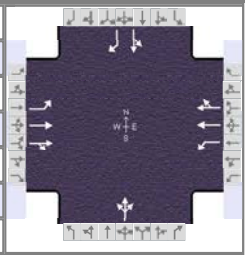
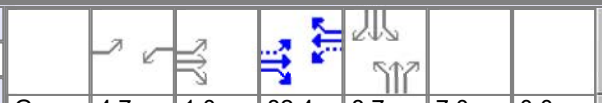
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	2> 8:00
Intersection	S Peck Ave & Artesia Blvd	File Name	S Peck Ave & Artesia Blvd.xus		
Project Description					

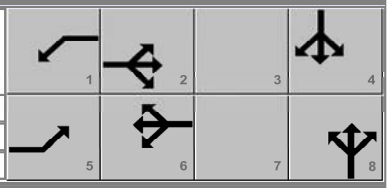


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	98	1043	158	47	774	30	58	22	3	37	42	89

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	4.7	1.0	82.4	8.7	7.0	0.0
Yellow	4.0	0.0	4.0	4.0	4.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		12.0		11.0
Phase Duration, s	9.8	87.5	8.7	86.4		11.0		12.7
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.1		3.2
Queue Clearance Time (g_s), s	3.8		2.9			7.4		8.5
Green Extension Time (g_e), s	0.2	0.0	0.1	0.0		0.1		0.3
Phase Call Probability	0.96		0.79			0.94		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	98	614	587	47	405	399		83			79	89
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1812	1810	1900	1875		1824			1857	1610
Queue Service Time (g_s), s	1.8	17.4	17.5	0.9	10.2	10.2		5.4			4.9	6.5
Cycle Queue Clearance Time (g_c), s	1.8	17.4	17.5	0.9	10.2	10.2		5.4			4.9	6.5
Green Ratio (*g/C*)	0.74	0.70	0.70	0.73	0.69	0.69		0.06			0.07	0.07
Capacity (*c*), veh/h	561	1322	1261	384	1305	1288		107			135	117
Volume-to-Capacity Ratio (*X*)	0.175	0.465	0.466	0.122	0.310	0.310		0.775			0.584	0.759
Back of Queue (*Q*), ft/ln (95 th percentile)	26	271	262	13	174	172		116			105	122
Back of Queue (*Q*), veh/ln (95 th percentile)	1.0	10.8	10.5	0.5	7.0	6.9		4.6			4.2	4.9
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	0.00
Uniform Delay (d_1), s/veh	5.0	8.2	8.2	6.2	7.5	7.5		55.7			53.9	54.6
Incremental Delay (d_2), s/veh	0.1	1.2	1.2	0.1	0.6	0.6		4.6			1.5	3.8
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Control Delay (*d*), s/veh	5.0	9.4	9.5	6.2	8.1	8.1		60.3			55.4	58.4
Level of Service (LOS)	A	A	A	A	A	A		E			E	E
Approach Delay, s/veh / LOS	9.1	A		8.0	A		60.3	E		57.0	E	
Intersection Delay, s/veh / LOS	13.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.87	B	2.32	B	2.32	B
Bicycle LOS Score / LOS	1.56	B	1.19	A	0.62	A	0.76	A

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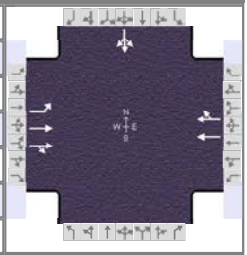
HCS Signalized Intersection Results Summary

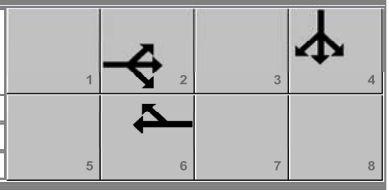
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd…	Analysis Year	2025	Analysis Period	2> 8:00
Intersection	S Meadows Ave & Artesi…	File Name	S Meadows Ave & Artesia Blvd_Exisitng Year No…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	72	1176	5		851	70				126	0	83

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	95.5	16.5	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6				4
Case Number		6.0		8.0				12.0
Phase Duration, s		99.5		99.5				20.5
Change Period, (*Y+R c*), s		4.0		4.0				4.0
Max Allow Headway (*MAH*), s		0.0		0.0				3.2
Queue Clearance Time (*g s*), s								16.3
Green Extension Time (*g e*), s		0.0		0.0				0.3
Phase Call Probability								1.00
Max Out Probability								0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6	16				7	4	14
Adjusted Flow Rate (*v*), veh/h	72	591	590		467	454					209	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	616	1900	1897		1900	1849					1725	
Queue Service Time (*g s*), s	4.7	11.1	11.1		11.1	8.0					14.3	
Cycle Queue Clearance Time (*g c*), s	15.8	11.1	11.1		11.1	8.0					14.3	
Green Ratio (*g/C*)	0.80	0.80	0.80		0.80	0.80					0.14	
Capacity (*c*), veh/h	494	1512	1509		1512	1471					237	
Volume-to-Capacity Ratio (*X*)	0.146	0.391	0.391		0.309	0.309					0.880	
Back of Queue (*Q*), ft/ln (95 th percentile)	28	148	149		107	105					274	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.1	5.9	5.9		4.3	4.2					11.0	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00		0.00	0.00					0.00	
Uniform Delay (*d 1*), s/veh	6.0	3.6	3.6		3.3	3.3					50.8	
Incremental Delay (*d 2*), s/veh	0.6	0.8	0.8		0.5	0.5					10.1	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0		0.0	0.0					0.0	
Control Delay (*d*), s/veh	6.6	4.4	4.4		3.9	3.9					60.8	
Level of Service (LOS)	A	A	A		A	A					E	
Approach Delay, s/veh / LOS	4.5	A		3.9	A		0.0			60.8	E	
Intersection Delay, s/veh / LOS	9.2						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.32	A	1.61	B	2.15	B	2.32	B
Bicycle LOS Score / LOS	1.52	B	1.25	A			0.83	A

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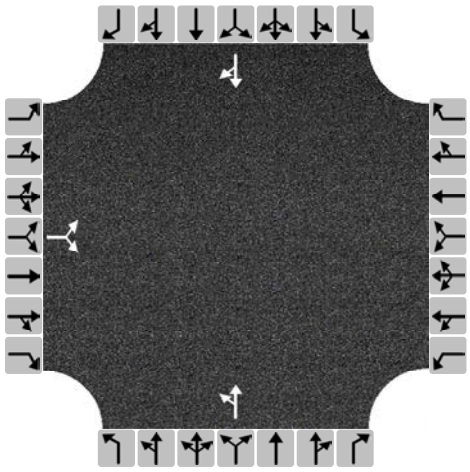
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	4:30-5:15pm
Project Description	
Intersection	S Meadows Ave & Keats St
Jurisdiction	Manhattan Beach, CA
East/West Street	Keats St
North/South Street	S Meadows Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	78		75				18	106			156	87
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	166						135			264		
Percent Heavy Vehicles	2						2			2		
Initial Departure Headway, h_d (s)	3.20						3.20			3.20		
Initial Degree of Utilization, x	0.148						0.120			0.235		
Final Departure Headway, h_d (s)	4.64						4.67			4.30		
Final Degree of Utilization, x	0.214						0.175			0.315		
Move-Up Time, m (s)	2.0						2.0			2.0		
Service Time, t_s (s)	2.64						2.67			2.30		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	166						135			264		
Capacity (veh/h)	775						771			838		
95% Queue Length, Q_{95} (veh)	0.8						0.6			1.4		
95% Queue Length, Q_{95} (ft)	20.3						15.2			35.6		
Control Delay (s/veh)	8.9						8.7			9.3		
Level of Service, LOS	A						A			A		
Approach Delay (s/veh) | LOS	8.9	A					8.7	A		9.3	A	
Intersection Delay (s/veh) | LOS	9.0						A					

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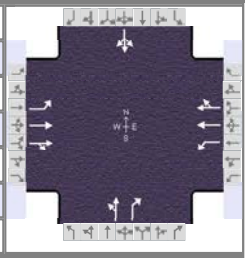
HCS Signalized Intersection Results Summary

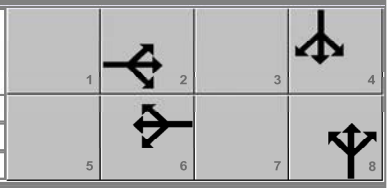
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	2> 8:00
Intersection	S Prospect Ave & Artesi…	File Name	S Prospect Ave & Artesia Blvd_Exisitng Year No P…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	34	1031	180	130	792	16	135	39	152	71	97	36

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	90.8	21.2	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		94.8		94.8		25.2		25.2
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						21.0		15.3
Green Extension Time (g_e), s		0.0		0.0		0.2		0.7
Phase Call Probability						1.00		1.00
Max Out Probability						1.00		0.14

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	34	621	590	130	405	403		174	152		204	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	685	1900	1801	469	1900	1887		1110	1610		1701	
Queue Service Time (g_s), s	1.9	14.1	14.2	16.7	7.9	7.9		5.7	10.3		0.0	
Cycle Queue Clearance Time (g_c), s	9.9	14.1	14.2	30.9	7.9	7.9		19.0	10.3		13.3	
Green Ratio (*g/C*)	0.76	0.76	0.76	0.76	0.76	0.76		0.18	0.18		0.18	
Capacity (*c*), veh/h	534	1438	1364	359	1438	1428		249	284		340	
Volume-to-Capacity Ratio (*X*)	0.064	0.432	0.433	0.362	0.282	0.282		0.699	0.536		0.599	
Back of Queue (*Q*), ft/ln (95 th percentile)	13	209	202	83	119	118		233	185		242	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5	8.4	8.1	3.3	4.8	4.7		9.3	7.4		9.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	
Uniform Delay (d_1), s/veh	6.0	5.3	5.3	10.9	4.5	4.5		49.3	45.0		46.1	
Incremental Delay (d_2), s/veh	0.2	0.9	1.0	2.8	0.5	0.5		6.6	0.8		1.8	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Control Delay (*d*), s/veh	6.3	6.2	6.3	13.7	5.0	5.0		55.9	45.7		47.9	
Level of Service (LOS)	A	A	A	B	A	A		E	D		D	
Approach Delay, s/veh / LOS	6.2	A		6.2	A		51.2	D		47.9	D	
Intersection Delay, s/veh / LOS	14.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.85	B	1.62	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.51	B	1.26	A	1.03	A	0.82	A

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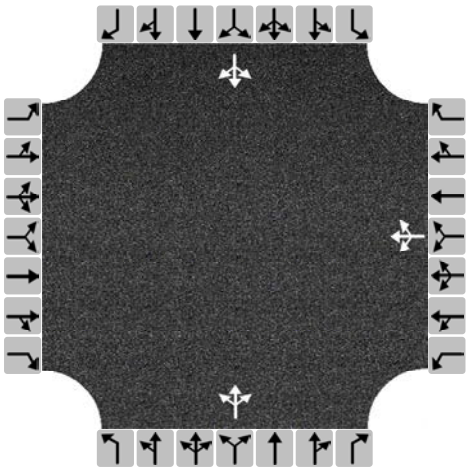
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Nelson Ave-Driveway 1(A)
Jurisdiction	Manhattan Beach, CA
East/West Street	Nelson Ave-Driveway 1(A)
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				27	37	37	66	165	21	23	127	63
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				110			274			232		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.098			0.243			0.206		
Final Departure Headway, h_d (s)				4.89			4.48			4.37		
Final Degree of Utilization, x				0.149			0.341			0.281		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.89			2.48			2.37		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				110			274			232		
Capacity (veh/h)				735			804			824		
95% Queue Length, Q_{95} (veh)				0.5			1.5			1.2		
95% Queue Length, Q_{95} (ft)				12.7			38.1			30.5		
Control Delay (s/veh)				8.8			9.8			9.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				8.8		A	9.8		A	9.1		A
Intersection Delay (s/veh) | LOS	9.3						A					

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HCS Two-Way Stop-Control Report

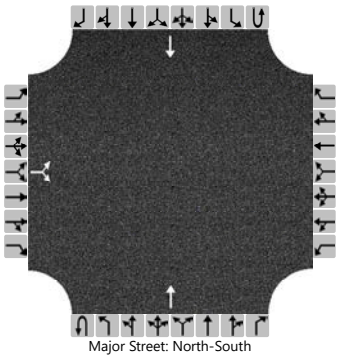
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	7:45-8:30am
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 2(B)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 2(B)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								T				T	
Volume (veh/h)		18		65							236				154	
Percent Heavy Vehicles (%)		0		0												
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2												
Critical Headway (sec)		6.40		6.20												
Base Follow-Up Headway (sec)		3.5		3.3												
Follow-Up Headway (sec)		3.50		3.30												

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			90													
Capacity, c (veh/h)			797													
v/c Ratio			0.11													
95% Queue Length, Q_{95} (veh)			0.4													
95% Queue Length, Q_{95} (ft)			10.0													
Control Delay (s/veh)			10.1													
Level of Service (LOS)			B													
Approach Delay (s/veh)		10.1														
Approach LOS		B														

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HCS Two-Way Stop-Control Report

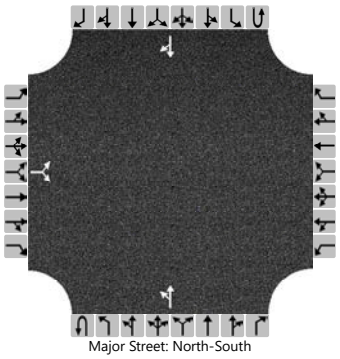
General Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Time Analyzed	7:45-8:30am
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 3(C)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 3(C)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		5		3						88	271				222	24
Percent Heavy Vehicles (%)		0		0						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9							96						
Capacity, c (veh/h)			445							1291						
v/c Ratio			0.02							0.07						
95% Queue Length, Q_{95} (veh)			0.1							0.2						
95% Queue Length, Q_{95} (ft)			2.5							5.1						
Control Delay (s/veh)			13.3							8.0	0.7					
Level of Service (LOS)			B							A	A					
Approach Delay (s/veh)		13.3								2.5						
Approach LOS		B								A						

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HCS Two-Way Stop-Control Report

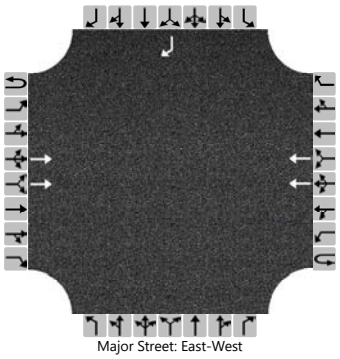
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	8:00-8:45am
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 4(D)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 4(D)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T									R
Volume (veh/h)			872				1394									38
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																41
Capacity, c (veh/h)																348
v/c Ratio																0.12
95% Queue Length, Q_{95} (veh)																0.4
95% Queue Length, Q_{95} (ft)																10.2
Control Delay (s/veh)																16.8
Level of Service (LOS)																C
Approach Delay (s/veh)													16.8			
Approach LOS													C			

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HCS Two-Way Stop-Control Report

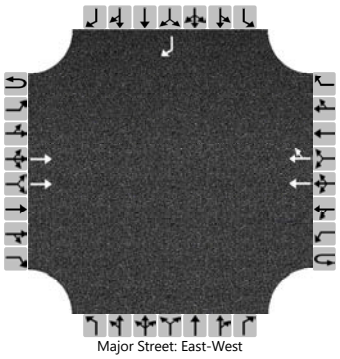
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	8:00-8:45am
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 5(E)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 5(E)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T	TR								R
Volume (veh/h)			868				1370	62								37
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																40
Capacity, c (veh/h)																337
v/c Ratio																0.12
95% Queue Length, Q_{95} (veh)																0.4
95% Queue Length, Q_{95} (ft)																10.2
Control Delay (s/veh)																17.1
Level of Service (LOS)																C
Approach Delay (s/veh)													17.1			
Approach LOS													C			

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HCS Two-Way Stop-Control Report

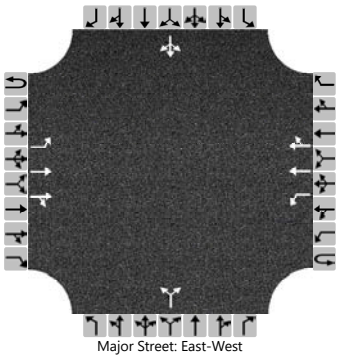
General Information

Analyst	
Agency/Co.	
Date Performed	9/2/2025
Analysis Year	2025
Time Analyzed	8:00-8:45AM
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Stanford Ave amd Artesia Blvd
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Standford Ave/Driveway F
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LR				LTR	
Volume (veh/h)	0	78	826	16	0	26	1377	6		4		29		5	1	75
Percent Heavy Vehicles (%)	3	3			3	3				3		3		0	0	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5		6.9		7.5	6.5	6.9
Critical Headway (sec)		4.16				4.16				7.56		6.96		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5		3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53		3.33		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		85				28					36				88	
Capacity, c (veh/h)		437				735					334				250	
v/c Ratio		0.19				0.04					0.11				0.35	
95% Queue Length, Q_{95} (veh)		0.7				0.1					0.4				1.6	
95% Queue Length, Q_{95} (ft)		17.9				2.6					10.2				40.0	
Control Delay (s/veh)		15.2				10.1					17.1				27.2	
Level of Service (LOS)		C				B					C				D	
Approach Delay (s/veh)	1.3				0.2				17.1				27.2			
Approach LOS	A				A				C				D			

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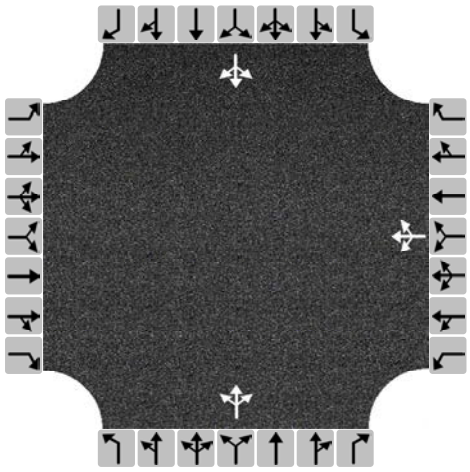
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	5:00-5:45pm
Project Description	
Intersection	S Peck Ave & Nelson Ave-Driveway 1(A)
Jurisdiction	Manhattan Beach, CA
East/West Street	Nelson Ave-Driveway 1(A)
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				16	13	5	22	136	9	8	118	27
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				37			182			166		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.033			0.161			0.148		
Final Departure Headway, h_d (s)				4.67			4.18			4.11		
Final Degree of Utilization, x				0.048			0.211			0.190		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.67			2.18			2.11		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				37			182			166		
Capacity (veh/h)				770			861			876		
95% Queue Length, Q_{95} (veh)				0.2			0.8			0.7		
95% Queue Length, Q_{95} (ft)				5.1			20.3			17.8		
Control Delay (s/veh)				7.9			8.3			8.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.9		A	8.3		A	8.1		A
Intersection Delay (s/veh) | LOS	8.2						A					

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HCS Two-Way Stop-Control Report

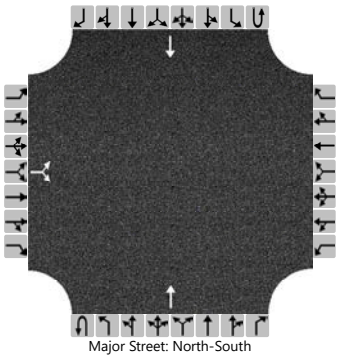
General Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Time Analyzed	4:00-4:45pm
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 2(B)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 2(B)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								T				T	
Volume (veh/h)		10		41							141				160	
Percent Heavy Vehicles (%)		0		0												
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2												
Critical Headway (sec)		6.40		6.20												
Base Follow-Up Headway (sec)		3.5		3.3												
Follow-Up Headway (sec)		3.50		3.30												

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			55													
Capacity, c (veh/h)			826													
v/c Ratio			0.07													
95% Queue Length, Q_{95} (veh)			0.2													
95% Queue Length, Q_{95} (ft)			5.0													
Control Delay (s/veh)			9.7													
Level of Service (LOS)			A													
Approach Delay (s/veh)		9.7														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

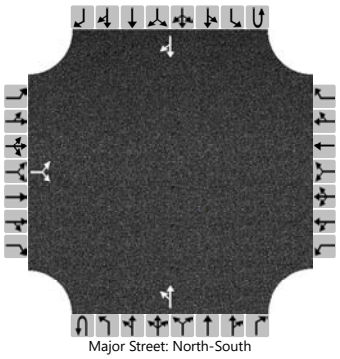
General Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Time Analyzed	4:00-4:45pm
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 3(C)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 3(C)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		6		8						4	146				201	5
Percent Heavy Vehicles (%)		0		0						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			15							4						
Capacity, c (veh/h)			720							1339						
v/c Ratio			0.02							0.00						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
95% Queue Length, Q_{95} (ft)			2.5							0.0						
Control Delay (s/veh)			10.1							7.7	0.0					
Level of Service (LOS)			B							A	A					
Approach Delay (s/veh)		10.1								0.2						
Approach LOS		B								A						

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HCS Two-Way Stop-Control Report

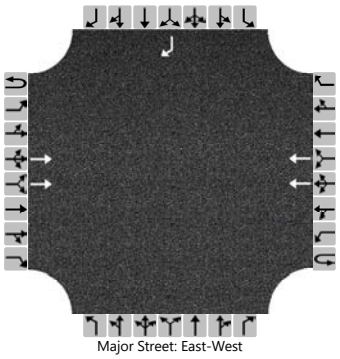
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	4:15-5:00pm
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 4(D)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 4(D)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T									R
Volume (veh/h)			1308				926									11
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																12
Capacity, c (veh/h)																511
v/c Ratio																0.02
95% Queue Length, Q_{95} (veh)																0.1
95% Queue Length, Q_{95} (ft)																2.6
Control Delay (s/veh)																12.2
Level of Service (LOS)																B
Approach Delay (s/veh)													12.2			
Approach LOS													B			

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HCS Two-Way Stop-Control Report

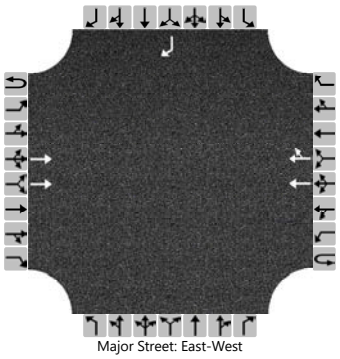
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	4:15-5:00pm
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 5(E)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 5(E)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T	TR								R
Volume (veh/h)			1302				933	2								7
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																8
Capacity, c (veh/h)																507
v/c Ratio																0.01
95% Queue Length, Q_{95} (veh)																0.0
95% Queue Length, Q_{95} (ft)																0.0
Control Delay (s/veh)																12.2
Level of Service (LOS)																B
Approach Delay (s/veh)													12.2			
Approach LOS													B			

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HCS Two-Way Stop-Control Report

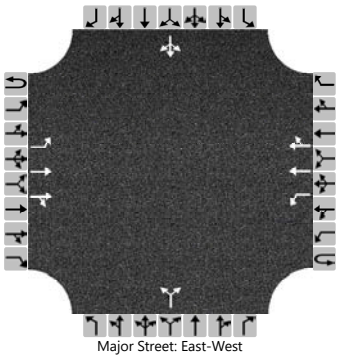
General Information

Analyst	
Agency/Co.	
Date Performed	9/2/2025
Analysis Year	2025
Time Analyzed	4:15-5:00PM
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Stanford Ave and Artesia Blvd
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Stanford Ave/Driveway F
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LR				LTR	
Volume (veh/h)	0	3	1271	31	0	29	906	3		5		14		3	0	6
Percent Heavy Vehicles (%)	3	3			3	3				3		3		0	0	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5		6.9		7.5	6.5	6.9
Critical Headway (sec)		4.16				4.16				7.56		6.96		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5		3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53		3.33		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3				32					21				10	
Capacity, c (veh/h)		689				472					230				283	
v/c Ratio		0.00				0.07					0.09				0.03	
95% Queue Length, Q_{95} (veh)		0.0				0.2					0.3				0.1	
95% Queue Length, Q_{95} (ft)		0.0				5.1					7.7				2.5	
Control Delay (s/veh)		10.2				13.2					22.2				18.2	
Level of Service (LOS)		B				B					C				C	
Approach Delay (s/veh)	0.0				0.4				22.2				18.2			
Approach LOS	A				A				C				C			

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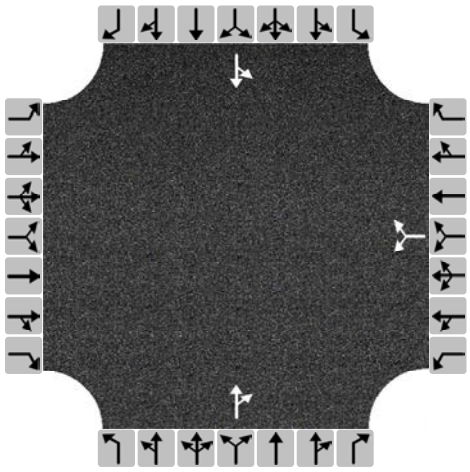
Appendix D—HCS Reports [2025 With Project]

HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Vorhees Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Vorhees Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				8		14		201	10	26	194	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				24			229			239		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.021			0.204			0.213		
Final Departure Headway, h_d (s)				4.61			4.20			4.24		
Final Degree of Utilization, x				0.031			0.267			0.282		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.61			2.20			2.24		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				24			229			239		
Capacity (veh/h)				780			858			849		
95% Queue Length, Q_{95} (veh)				0.1			1.1			1.2		
95% Queue Length, Q_{95} (ft)				2.5			27.9			30.5		
Control Delay (s/veh)				7.8			8.7			8.9		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.8		A	8.7		A	8.9		A
Intersection Delay (s/veh) | LOS	8.8						A					

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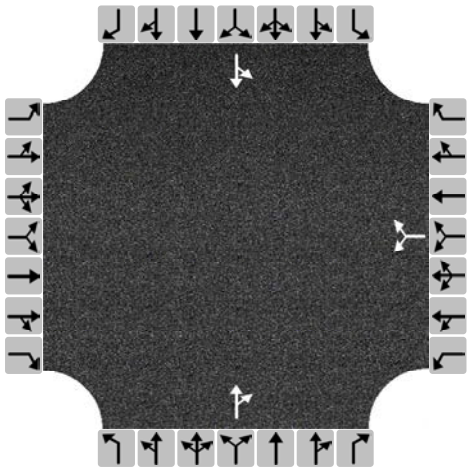
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Ruhland Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Ruhland Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				19		15		196	15	10	182	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				37			229			209		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.033			0.204			0.186		
Final Departure Headway, h_d (s)				4.71			4.19			4.26		
Final Degree of Utilization, x				0.048			0.267			0.247		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.71			2.19			2.26		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				37			229			209		
Capacity (veh/h)				764			859			845		
95% Queue Length, Q_{95} (veh)				0.2			1.1			1.0		
95% Queue Length, Q_{95} (ft)				5.1			27.9			25.4		
Control Delay (s/veh)				7.9			8.7			8.7		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.9		A	8.7		A	8.7		A
Intersection Delay (s/veh) | LOS	8.6						A					

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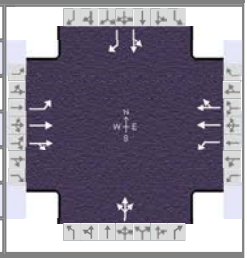
HCS Signalized Intersection Results Summary

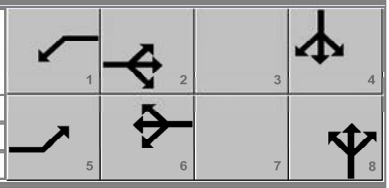
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	S Peck Ave & Artesia Blvd	File Name	S Peck Ave & Artesia Blvd.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	141	674	53	21	1149	122	117	92	8	71	24	127

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.0	2.9		70.2	11.6	16.2	0.0					
Yellow	4.0	0.0		4.0	4.0	4.0	0.0					
Red	0.0	0.0		0.0	0.0	0.0	0.0					



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		12.0		11.0
Phase Duration, s	9.9	77.1	7.0	74.2		20.2		15.6
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.0		3.2
Queue Clearance Time (g_s), s	5.6		2.5			15.9		11.3
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0		0.4		0.4
Phase Call Probability	0.99		0.50			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	141	368	359	21	645	626		217			95	127
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1851	1810	1900	1836		1838			1832	1610
Queue Service Time (g_s), s	3.6	11.3	11.3	0.5	25.6	25.7		13.9			5.9	9.3
Cycle Queue Clearance Time (g_c), s	3.6	11.3	11.3	0.5	25.6	25.7		13.9			5.9	9.3
Green Ratio (*g/C*)	0.64	0.61	0.61	0.61	0.58	0.58		0.14			0.10	0.10
Capacity (*c*), veh/h	314	1158	1128	474	1111	1074		249			177	156
Volume-to-Capacity Ratio (*X*)	0.450	0.318	0.318	0.044	0.581	0.583		0.873			0.535	0.814
Back of Queue (*Q*), ft/ln (95 th percentile)	60	205	201	9	410	401		268			123	174
Back of Queue (*Q*), veh/ln (95 th percentile)	2.4	8.2	8.0	0.4	16.4	16.0		10.7			4.9	7.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	0.00
Uniform Delay (d_1), s/veh	12.7	11.4	11.4	9.7	15.7	15.7		50.9			51.6	53.1
Incremental Delay (d_2), s/veh	0.4	0.7	0.7	0.0	2.2	2.3		3.9			0.9	4.0
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Control Delay (*d*), s/veh	13.1	12.1	12.1	9.7	17.9	18.0		54.8			52.6	57.1
Level of Service (LOS)	B	B	B	A	B	B		D			D	E
Approach Delay, s/veh / LOS	12.3	B		17.8	B		54.8	D		55.2	E	
Intersection Delay, s/veh / LOS	22.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.66	B	1.89	B	2.32	B	2.31	B
Bicycle LOS Score / LOS	1.20	A	1.55	B	0.85	A	0.85	A

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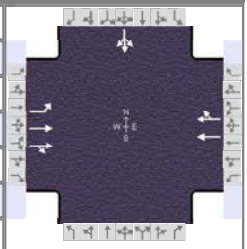
HCS Signalized Intersection Results Summary

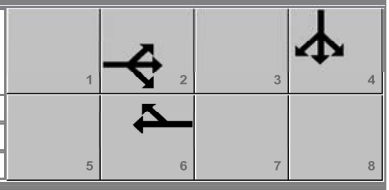
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd…	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	S Meadows Ave & Artesi…	File Name	S Meadows Ave & Artesia Blvd_Exisitng Year Wit…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	56	798	4		1310	148				99	0	69

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	98.3	13.7	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6				4
Case Number		6.0		8.0				12.0
Phase Duration, s		102.3		102.3				17.7
Change Period, (*Y+R c*), s		4.0		4.0				4.0
Max Allow Headway (*MAH*), s		0.0		0.0				3.2
Queue Clearance Time (*g s*), s								13.5
Green Extension Time (*g e*), s		0.0		0.0				0.2
Phase Call Probability								1.00
Max Out Probability								0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6	16				7	4	14
Adjusted Flow Rate (*v*), veh/h	56	401	401		739	719					168	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	370	1900	1897		1900	1832					1722	
Queue Service Time (*g s*), s	7.7	5.8	5.8		21.7	14.0					11.5	
Cycle Queue Clearance Time (*g c*), s	29.5	5.8	5.8		21.7	14.0					11.5	
Green Ratio (*g/C*)	0.82	0.82	0.82		0.82	0.82					0.11	
Capacity (*c*), veh/h	296	1557	1554		1557	1501					196	
Volume-to-Capacity Ratio (*X*)	0.189	0.258	0.258		0.475	0.479					0.856	
Back of Queue (*Q*), ft/ln (95 th percentile)	31	68	69		165	164					221	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.2	2.7	2.8		6.6	6.5					8.8	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00		0.00	0.00					0.00	
Uniform Delay (*d 1*), s/veh	9.2	2.5	2.5		3.2	3.2					52.2	
Incremental Delay (*d 2*), s/veh	1.4	0.4	0.4		1.0	1.1					4.3	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0		0.0	0.0					0.0	
Control Delay (*d*), s/veh	10.7	2.9	2.9		4.2	4.3					56.5	
Level of Service (LOS)	B	A	A		A	A					E	
Approach Delay, s/veh / LOS	3.4	A		4.3	A		0.0			56.5	E	
Intersection Delay, s/veh / LOS	7.5						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.31	A	1.60	B	2.15	B	2.32	B
Bicycle LOS Score / LOS	1.20	A	1.69	B			0.76	A

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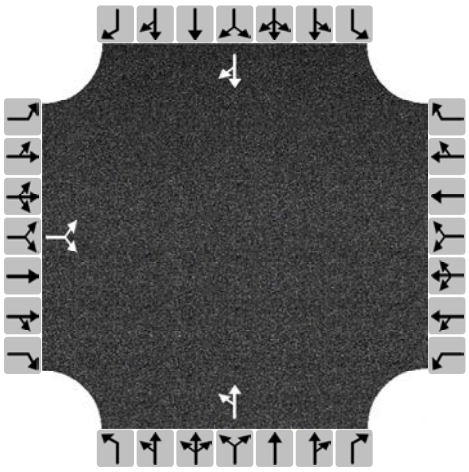
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	8:00-8:45am
Project Description	
Intersection	S Meadows Ave & Keats St
Jurisdiction	Manhattan Beach, CA
East/West Street	Keats St
North/South Street	S Meadows Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	74		62				34	102			93	98
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	148						148			208		
Percent Heavy Vehicles	2						2			2		
Initial Departure Headway, h_d (s)	3.20						3.20			3.20		
Initial Degree of Utilization, x	0.131						0.131			0.185		
Final Departure Headway, h_d (s)	4.56						4.57			4.16		
Final Degree of Utilization, x	0.187						0.188			0.240		
Move-Up Time, m (s)	2.0						2.0			2.0		
Service Time, t_s (s)	2.56						2.57			2.16		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	148						148			208		
Capacity (veh/h)	790						788			865		
95% Queue Length, Q_{95} (veh)	0.7						0.7			0.9		
95% Queue Length, Q_{95} (ft)	17.8						17.8			22.9		
Control Delay (s/veh)	8.6						8.6			8.5		
Level of Service, LOS	A						A			A		
Approach Delay (s/veh) | LOS	8.6	A					8.6	A		8.5	A	
Intersection Delay (s/veh) | LOS	8.6						A					

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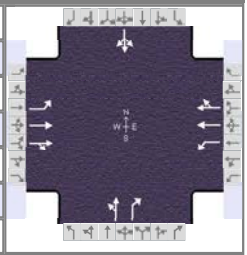
HCS Signalized Intersection Results Summary

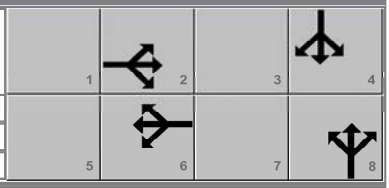
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	S Prospect Ave & Artesi…	File Name	S Prospect Ave & Artesia Blvd_Exisitng Year With…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	36	662	87	133	1112	122	143	71	165	29	26	34

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	92.7	19.3	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		96.7		96.7		23.3		23.3
Change Period, (*Y+R c*), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (*g s*), s						18.7		7.4
Green Extension Time (*g e*), s		0.0		0.0		0.6		0.9
Phase Call Probability						1.00		1.00
Max Out Probability						0.08		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	36	382	367	133	627	607		214	165		89	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	458	1900	1822	724	1900	1834		1505	1610		1667	
Queue Service Time (*g s*), s	3.5	6.9	6.9	7.7	13.5	13.5		11.3	11.5		0.0	
Cycle Queue Clearance Time (*g c*), s	17.0	6.9	6.9	14.6	13.5	13.5		16.7	11.5		5.4	
Green Ratio (*g/C*)	0.77	0.77	0.77	0.77	0.77	0.77		0.16	0.16		0.16	
Capacity (*c*), veh/h	362	1467	1407	578	1467	1416		292	259		308	
Volume-to-Capacity Ratio (*X*)	0.099	0.260	0.261	0.230	0.427	0.428		0.732	0.637		0.289	
Back of Queue (*Q*), ft/ln (95 th percentile)	16	100	96	52	194	191		265	203		105	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.7	4.0	3.8	2.1	7.8	7.6		10.6	8.1		4.2	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	
Uniform Delay (*d 1*), s/veh	7.5	3.9	3.9	6.0	4.6	4.6		49.2	47.1		44.5	
Incremental Delay (*d 2*), s/veh	0.5	0.4	0.5	0.9	0.9	1.0		3.5	1.0		0.2	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Control Delay (*d*), s/veh	8.1	4.3	4.3	6.9	5.6	5.6		52.7	48.0		44.7	
Level of Service (LOS)	A	A	A	A	A	A		D	D		D	
Approach Delay, s/veh / LOS	4.5	A		5.7	A		50.7	D		44.7	D	
Intersection Delay, s/veh / LOS	13.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.84	B	1.62	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.14	A	1.62	B	1.11	A	0.63	A

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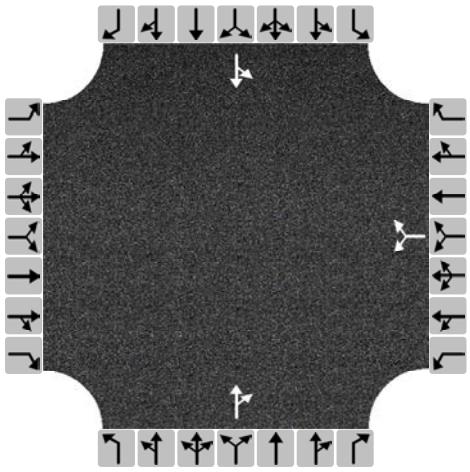
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Vorhees Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Vorhees Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				8		14		201	10	26	194	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				24			229			239		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.021			0.204			0.213		
Final Departure Headway, h_d (s)				4.61			4.20			4.24		
Final Degree of Utilization, x				0.031			0.267			0.282		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.61			2.20			2.24		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				24			229			239		
Capacity (veh/h)				780			858			849		
95% Queue Length, Q_{95} (veh)				0.1			1.1			1.2		
95% Queue Length, Q_{95} (ft)				2.5			27.9			30.5		
Control Delay (s/veh)				7.8			8.7			8.9		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.8		A	8.7		A	8.9		A
Intersection Delay (s/veh) | LOS	8.8						A					

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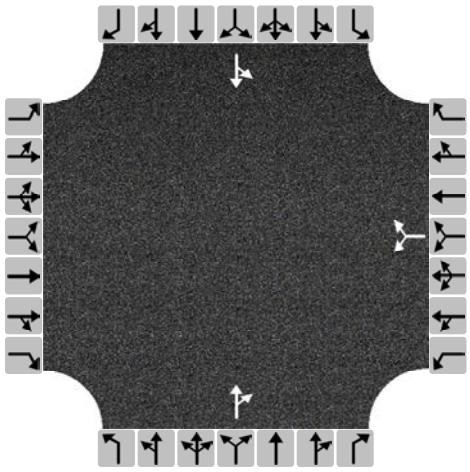
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Ruhland Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Ruhland Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				19		15		196	15	10	182	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				37			229			209		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.033			0.204			0.186		
Final Departure Headway, h_d (s)				4.71			4.19			4.26		
Final Degree of Utilization, x				0.048			0.267			0.247		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.71			2.19			2.26		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				37			229			209		
Capacity (veh/h)				764			859			845		
95% Queue Length, Q_{95} (veh)				0.2			1.1			1.0		
95% Queue Length, Q_{95} (ft)				5.1			27.9			25.4		
Control Delay (s/veh)				7.9			8.7			8.7		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.9		A	8.7		A	8.7		A
Intersection Delay (s/veh) | LOS	8.6						A					

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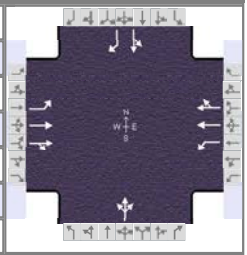
HCS Signalized Intersection Results Summary

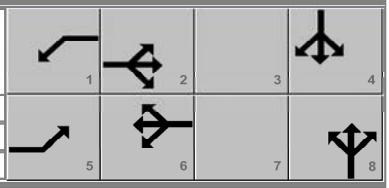
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	2> 8:00
Intersection	S Peck Ave & Artesia Blvd	File Name	S Peck Ave & Artesia Blvd_Exisitng Year With Pro…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	100	1046	158	47	781	32	58	23	3	38	43	90

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	4.7	1.0	82.3	8.8	7.1	0.0						
Yellow	4.0	0.0	4.0	4.0	4.0	0.0						
Red	0.0	0.0	0.0	0.0	0.0	0.0						



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		12.0		11.0
Phase Duration, s	9.8	87.3	8.7	86.3		11.1		12.8
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.1		3.2
Queue Clearance Time (g_s), s	3.9		2.9			7.4		8.6
Green Extension Time (g_e), s	0.2	0.0	0.1	0.0		0.1		0.3
Phase Call Probability	0.96		0.79			0.94		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	100	615	589	47	409	404		84			81	90
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1812	1810	1900	1873		1825			1856	1610
Queue Service Time (g_s), s	1.9	17.6	17.6	0.9	10.4	10.4		5.4			5.1	6.6
Cycle Queue Clearance Time (g_c), s	1.9	17.6	17.6	0.9	10.4	10.4		5.4			5.1	6.6
Green Ratio (*g/C*)	0.73	0.69	0.69	0.73	0.69	0.69		0.06			0.07	0.07
Capacity (*c*), veh/h	556	1319	1258	382	1303	1284		108			136	118
Volume-to-Capacity Ratio (*X*)	0.180	0.467	0.468	0.123	0.314	0.314		0.776			0.594	0.760
Back of Queue (*Q*), ft/ln (95 th percentile)	27	272	264	13	178	176		117			108	124
Back of Queue (*Q*), veh/ln (95 th percentile)	1.1	10.9	10.6	0.5	7.1	7.0		4.7			4.3	4.9
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	0.00
Uniform Delay (d_1), s/veh	5.0	8.3	8.3	6.3	7.6	7.6		55.7			53.9	54.6
Incremental Delay (d_2), s/veh	0.1	1.2	1.3	0.1	0.6	0.6		4.6			1.5	3.8
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Control Delay (*d*), s/veh	5.1	9.5	9.6	6.3	8.2	8.2		60.2			55.4	58.4
Level of Service (LOS)	A	A	A	A	A	A		E			E	E
Approach Delay, s/veh / LOS	9.2	A		8.1	A		60.2	E		57.0	E	
Intersection Delay, s/veh / LOS	13.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.87	B	2.32	B	2.32	B
Bicycle LOS Score / LOS	1.56	B	1.20	A	0.63	A	0.77	A

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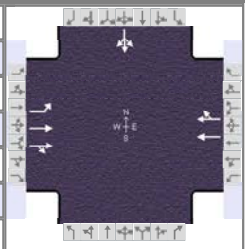
HCS Signalized Intersection Results Summary

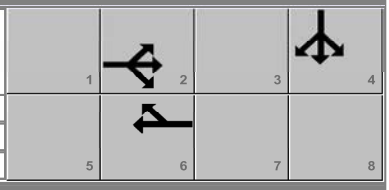
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd…	Analysis Year	2025	Analysis Period	2> 8:00
Intersection	S Meadows Ave & Artesi…	File Name	S Meadows Ave & Artesia Blvd_Exisitng Year Wit…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	78	1178	5		852	77				129	0	86

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	95.1	16.9	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6				4
Case Number		6.0		8.0				12.0
Phase Duration, s		99.1		99.1				20.9
Change Period, (*Y+R c*), s		4.0		4.0				4.0
Max Allow Headway (*MAH*), s		0.0		0.0				3.2
Queue Clearance Time (*g s*), s								16.7
Green Extension Time (*g e*), s		0.0		0.0				0.3
Phase Call Probability								1.00
Max Out Probability								0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6	16				7	4	14
Adjusted Flow Rate (*v*), veh/h	78	592	591		471	458					215	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	612	1900	1897		1900	1844					1724	
Queue Service Time (*g s*), s	5.3	11.3	11.3		11.2	8.2					14.7	
Cycle Queue Clearance Time (*g c*), s	16.5	11.3	11.3		11.2	8.2					14.7	
Green Ratio (*g/C*)	0.79	0.79	0.79		0.79	0.79					0.14	
Capacity (*c*), veh/h	488	1505	1503		1505	1461					243	
Volume-to-Capacity Ratio (*X*)	0.160	0.393	0.393		0.313	0.313					0.883	
Back of Queue (*Q*), ft/ln (95 th percentile)	31	154	154		111	109					283	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.2	6.1	6.1		4.4	4.3					11.3	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00		0.00	0.00					0.00	
Uniform Delay (*d 1*), s/veh	6.2	3.8	3.8		3.4	3.4					50.6	
Incremental Delay (*d 2*), s/veh	0.7	0.8	0.8		0.5	0.6					11.6	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0		0.0	0.0					0.0	
Control Delay (*d*), s/veh	6.9	4.5	4.5		4.0	4.0					62.2	
Level of Service (LOS)	A	A	A		A	A					E	
Approach Delay, s/veh / LOS	4.7	A		4.0	A		0.0			62.2	E	
Intersection Delay, s/veh / LOS	9.6						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.32	A	1.61	B	2.15	B	2.32	B
Bicycle LOS Score / LOS	1.53	B	1.25	A			0.84	A

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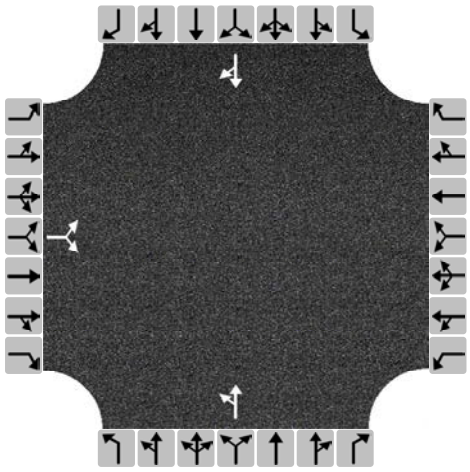
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	8:00-8:45am
Project Description	
Intersection	S Meadows Ave & Keats St
Jurisdiction	Manhattan Beach, CA
East/West Street	Keats St
North/South Street	S Meadows Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	74		62				34	102			93	98
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	148						148			208		
Percent Heavy Vehicles	2						2			2		
Initial Departure Headway, h_d (s)	3.20						3.20			3.20		
Initial Degree of Utilization, x	0.131						0.131			0.185		
Final Departure Headway, h_d (s)	4.56						4.57			4.16		
Final Degree of Utilization, x	0.187						0.188			0.240		
Move-Up Time, m (s)	2.0						2.0			2.0		
Service Time, t_s (s)	2.56						2.57			2.16		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	148						148			208		
Capacity (veh/h)	790						788			865		
95% Queue Length, Q_{95} (veh)	0.7						0.7			0.9		
95% Queue Length, Q_{95} (ft)	17.8						17.8			22.9		
Control Delay (s/veh)	8.6						8.6			8.5		
Level of Service, LOS	A						A			A		
Approach Delay (s/veh) | LOS	8.6	A					8.6	A		8.5	A	
Intersection Delay (s/veh) | LOS	8.6						A					

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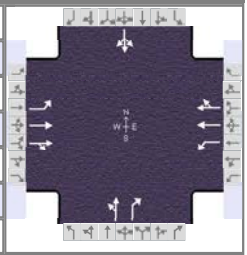
HCS Signalized Intersection Results Summary

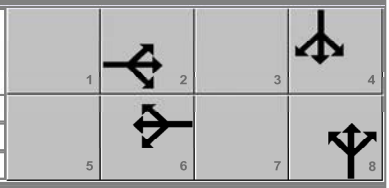
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	2> 8:00
Intersection	S Prospect Ave & Artesi…	File Name	S Prospect Ave & Artesia Blvd_Exisitng Year With…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	34	1038	180	131	795	16	135	39	153	71	97	36

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	90.5	21.5	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		94.5		94.5		25.5		25.5
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						20.9		15.3
Green Extension Time (g_e), s		0.0		0.0		0.6		0.9
Phase Call Probability						1.00		1.00
Max Out Probability						0.34		0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	34	624	594	131	407	404		174	153		204	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	683	1900	1802	466	1900	1887		1117	1610		1700	
Queue Service Time (g_s), s	2.0	14.4	14.5	17.2	8.0	8.0		5.7	10.3		0.0	
Cycle Queue Clearance Time (g_c), s	10.0	14.4	14.5	31.8	8.0	8.0		18.9	10.3		13.3	
Green Ratio (*g/C*)	0.75	0.75	0.75	0.75	0.75	0.75		0.18	0.18		0.18	
Capacity (*c*), veh/h	529	1433	1359	355	1433	1423		253	289		345	
Volume-to-Capacity Ratio (*X*)	0.064	0.436	0.437	0.369	0.284	0.284		0.687	0.530		0.591	
Back of Queue (*Q*), ft/ln (95 th percentile)	13	214	207	86	122	122		225	184		238	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5	8.6	8.3	3.4	4.9	4.9		9.0	7.4		9.5	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	
Uniform Delay (d_1), s/veh	6.2	5.4	5.4	11.2	4.6	4.6		48.9	44.7		45.8	
Incremental Delay (d_2), s/veh	0.2	1.0	1.0	3.0	0.5	0.5		3.3	0.6		0.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Control Delay (*d*), s/veh	6.4	6.4	6.4	14.2	5.1	5.1		52.2	45.2		46.4	
Level of Service (LOS)	A	A	A	B	A	A		D	D		D	
Approach Delay, s/veh / LOS	6.4	A		6.4	A		48.9	D		46.4	D	
Intersection Delay, s/veh / LOS	14.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.85	B	1.62	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.52	B	1.26	A	1.03	A	0.82	A

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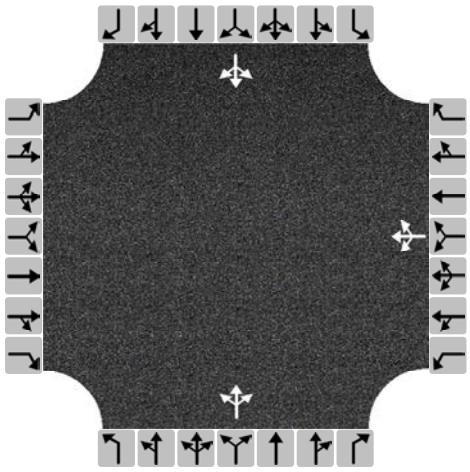
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Nelson Ave-Driveway 1(A)
Jurisdiction	Manhattan Beach, CA
East/West Street	Nelson Ave-Driveway 1(A)
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				27	37	37	66	165	21	23	127	63
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				110			274			232		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.098			0.243			0.206		
Final Departure Headway, h_d (s)				4.89			4.48			4.37		
Final Degree of Utilization, x				0.149			0.341			0.281		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.89			2.48			2.37		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				110			274			232		
Capacity (veh/h)				735			804			824		
95% Queue Length, Q_{95} (veh)				0.5			1.5			1.2		
95% Queue Length, Q_{95} (ft)				12.7			38.1			30.5		
Control Delay (s/veh)				8.8			9.8			9.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				8.8		A	9.8		A	9.1		A
Intersection Delay (s/veh) | LOS	9.3						A					

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HCS Two-Way Stop-Control Report

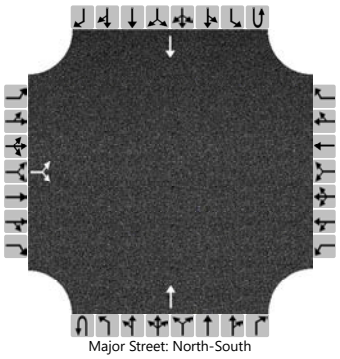
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	7:45-8:30am
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 2(B)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 2(B)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								T				T	
Volume (veh/h)		18		65							236				154	
Percent Heavy Vehicles (%)		0		0												
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2												
Critical Headway (sec)		6.40		6.20												
Base Follow-Up Headway (sec)		3.5		3.3												
Follow-Up Headway (sec)		3.50		3.30												

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			90													
Capacity, c (veh/h)			797													
v/c Ratio			0.11													
95% Queue Length, Q_{95} (veh)			0.4													
95% Queue Length, Q_{95} (ft)			10.0													
Control Delay (s/veh)			10.1													
Level of Service (LOS)			B													
Approach Delay (s/veh)		10.1														
Approach LOS		B														

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HCS Two-Way Stop-Control Report

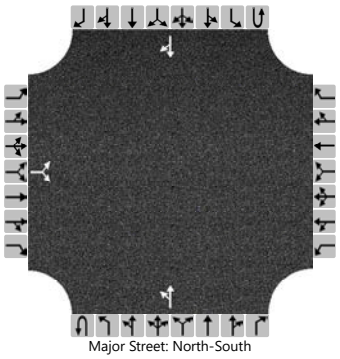
General Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Time Analyzed	7:45-8:30am
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 3(C)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 3(C)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		5		3						88	271				222	24
Percent Heavy Vehicles (%)		0		0						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9							96						
Capacity, c (veh/h)			445							1291						
v/c Ratio			0.02							0.07						
95% Queue Length, Q_{95} (veh)			0.1							0.2						
95% Queue Length, Q_{95} (ft)			2.5							5.1						
Control Delay (s/veh)			13.3							8.0	0.7					
Level of Service (LOS)			B							A	A					
Approach Delay (s/veh)		13.3								2.5						
Approach LOS		B								A						

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HCS Two-Way Stop-Control Report

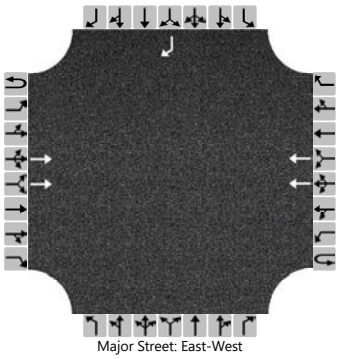
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	8:00-8:45am
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 4(D)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 4(D)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T									R
Volume (veh/h)			872				1394									38
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																41
Capacity, c (veh/h)																348
v/c Ratio																0.12
95% Queue Length, Q_{95} (veh)																0.4
95% Queue Length, Q_{95} (ft)																10.2
Control Delay (s/veh)																16.8
Level of Service (LOS)																C
Approach Delay (s/veh)													16.8			
Approach LOS													C			

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HCS Two-Way Stop-Control Report

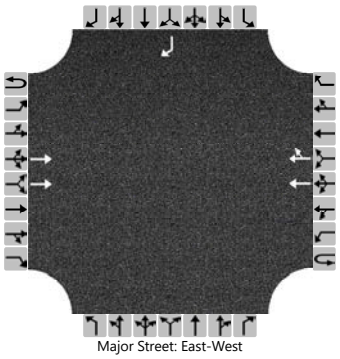
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	8:00-8:45am
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 5(E)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 5(E)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T	TR								R
Volume (veh/h)			868				1370	62								37
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																40
Capacity, c (veh/h)																337
v/c Ratio																0.12
95% Queue Length, Q_{95} (veh)																0.4
95% Queue Length, Q_{95} (ft)																10.2
Control Delay (s/veh)																17.1
Level of Service (LOS)																C
Approach Delay (s/veh)													17.1			
Approach LOS													C			

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HCS Two-Way Stop-Control Report

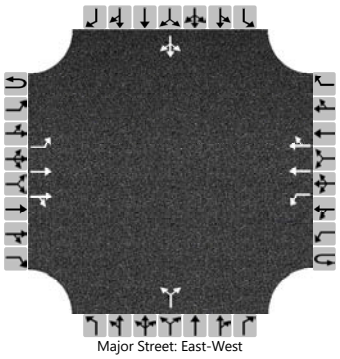
General Information

Analyst	
Agency/Co.	
Date Performed	9/2/2025
Analysis Year	2025
Time Analyzed	8:00-8:45AM
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Stanford Ave amd Artesia Blvd
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Standford Ave/Driveway F
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LR				LTR	
Volume (veh/h)	0	78	826	16	0	26	1377	6		4		29		5	1	75
Percent Heavy Vehicles (%)	3	3			3	3				3		3		0	0	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5		6.9		7.5	6.5	6.9
Critical Headway (sec)		4.16				4.16				7.56		6.96		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5		3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53		3.33		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		85				28					36				88	
Capacity, c (veh/h)		437				735					334				250	
v/c Ratio		0.19				0.04					0.11				0.35	
95% Queue Length, Q_{95} (veh)		0.7				0.1					0.4				1.6	
95% Queue Length, Q_{95} (ft)		17.9				2.6					10.2				40.0	
Control Delay (s/veh)		15.2				10.1					17.1				27.2	
Level of Service (LOS)		C				B					C				D	
Approach Delay (s/veh)	1.3				0.2				17.1				27.2			
Approach LOS	A				A				C				D			

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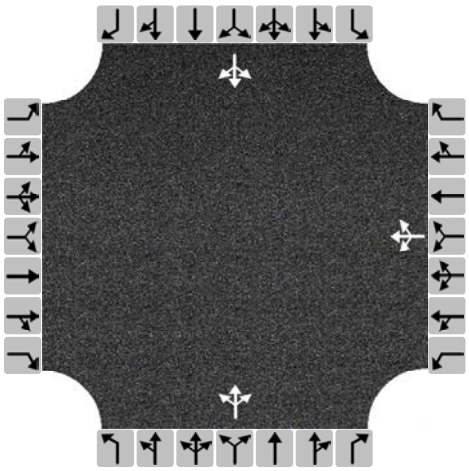
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	5:00-5:45pm
Project Description	
Intersection	S Peck Ave & Nelson Ave-Driveway 1(A)
Jurisdiction	Manhattan Beach, CA
East/West Street	Nelson Ave-Driveway 1(A)
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				16	13	5	22	137	9	8	119	27
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				37			183			167		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.033			0.162			0.149		
Final Departure Headway, h_d (s)				4.68			4.18			4.11		
Final Degree of Utilization, x				0.048			0.212			0.191		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.68			2.18			2.11		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				37			183			167		
Capacity (veh/h)				770			861			876		
95% Queue Length, Q_{95} (veh)				0.2			0.8			0.7		
95% Queue Length, Q_{95} (ft)				5.1			20.3			17.8		
Control Delay (s/veh)				7.9			8.3			8.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.9		A	8.3		A	8.1		A
Intersection Delay (s/veh) | LOS	8.2						A					

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HCS Two-Way Stop-Control Report

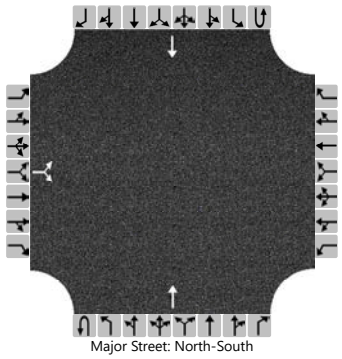
General Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Time Analyzed	4:00-4:45pm
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 2(B)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 2(B)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								T				T	
Volume (veh/h)		10		41							142				161	
Percent Heavy Vehicles (%)		0		0												
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2												
Critical Headway (sec)		6.40		6.20												
Base Follow-Up Headway (sec)		3.5		3.3												
Follow-Up Headway (sec)		3.50		3.30												

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			55													
Capacity, c (veh/h)			824													
v/c Ratio			0.07													
95% Queue Length, Q_{95} (veh)			0.2													
95% Queue Length, Q_{95} (ft)			5.0													
Control Delay (s/veh)			9.7													
Level of Service (LOS)			A													
Approach Delay (s/veh)		9.7														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

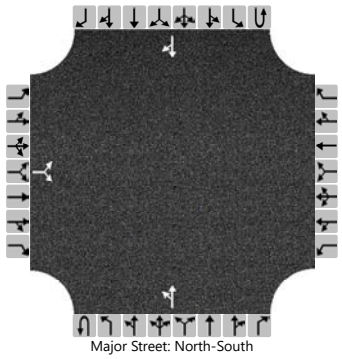
General Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Time Analyzed	4:00-4:45pm
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 3(C)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 3(C)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		7		11						6	146				201	6
Percent Heavy Vehicles (%)		0		0						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			20							7						
Capacity, c (veh/h)			725							1338						
v/c Ratio			0.03							0.00						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
95% Queue Length, Q_{95} (ft)			2.5							0.0						
Control Delay (s/veh)			10.1							7.7	0.0					
Level of Service (LOS)			B							A	A					
Approach Delay (s/veh)		10.1								0.3						
Approach LOS		B								A						

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HCS Two-Way Stop-Control Report

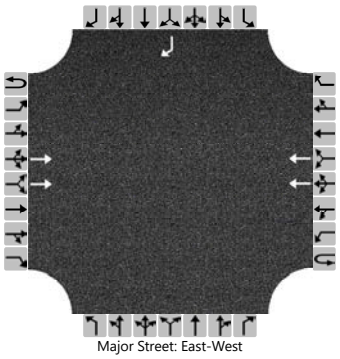
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	4:15-5:00pm
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 4(D)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 4(D)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T									R
Volume (veh/h)			1313				934									11
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																12
Capacity, c (veh/h)																508
v/c Ratio																0.02
95% Queue Length, Q_{95} (veh)																0.1
95% Queue Length, Q_{95} (ft)																2.6
Control Delay (s/veh)																12.3
Level of Service (LOS)																B
Approach Delay (s/veh)													12.3			
Approach LOS													B			

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HCS Two-Way Stop-Control Report

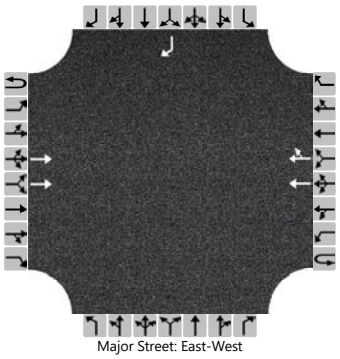
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	4:15-5:00pm
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 5(E)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 5(E)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T	TR								R
Volume (veh/h)			1307				941	2								7
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																8
Capacity, c (veh/h)																504
v/c Ratio																0.02
95% Queue Length, Q_{95} (veh)																0.0
95% Queue Length, Q_{95} (ft)																0.0
Control Delay (s/veh)																12.3
Level of Service (LOS)																B
Approach Delay (s/veh)													12.3			
Approach LOS													B			

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HCS Two-Way Stop-Control Report

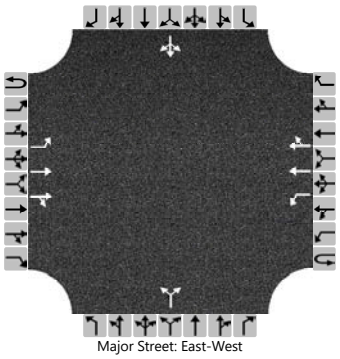
General Information

Analyst	
Agency/Co.	
Date Performed	9/2/2025
Analysis Year	2025
Time Analyzed	4:15-5:00PM
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Stanford Ave and Artesia Blvd
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Stanford Ave/Driveway F
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LR				LTR	
Volume (veh/h)	0	3	1276	31	0	29	914	3		5		14		3	0	6
Percent Heavy Vehicles (%)	3	3			3	3				3		3		0	0	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5		6.9		7.5	6.5	6.9
Critical Headway (sec)		4.16				4.16				7.56		6.96		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5		3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53		3.33		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3				32					21				10	
Capacity, c (veh/h)		684				470					228				280	
v/c Ratio		0.00				0.07					0.09				0.03	
95% Queue Length, Q_{95} (veh)		0.0				0.2					0.3				0.1	
95% Queue Length, Q_{95} (ft)		0.0				5.1					7.7				2.5	
Control Delay (s/veh)		10.3				13.2					22.3				18.3	
Level of Service (LOS)		B				B					C				C	
Approach Delay (s/veh)	0.0				0.4				22.3				18.3			
Approach LOS	A				A				C				C			

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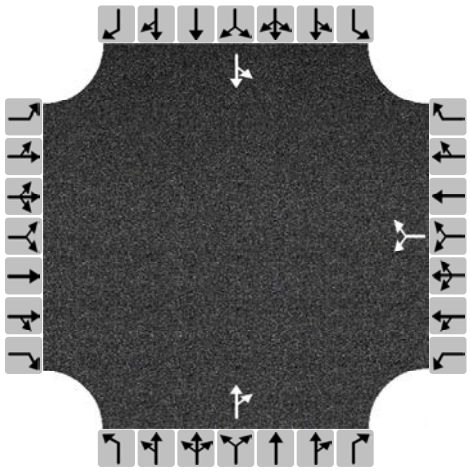
Appendix E—Synchro Reports [2026 No Project]

HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Vorhees Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Vorhees Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				8		14		203	10	26	196	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				24			232			241		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.021			0.206			0.214		
Final Departure Headway, h_d (s)				4.62			4.20			4.24		
Final Degree of Utilization, x				0.031			0.270			0.284		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.62			2.20			2.24		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				24			232			241		
Capacity (veh/h)				779			857			849		
95% Queue Length, Q_{95} (veh)				0.1			1.1			1.2		
95% Queue Length, Q_{95} (ft)				2.5			27.9			30.5		
Control Delay (s/veh)				7.8			8.8			8.9		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.8		A	8.8		A	8.9		A
Intersection Delay (s/veh) | LOS	8.8						A					

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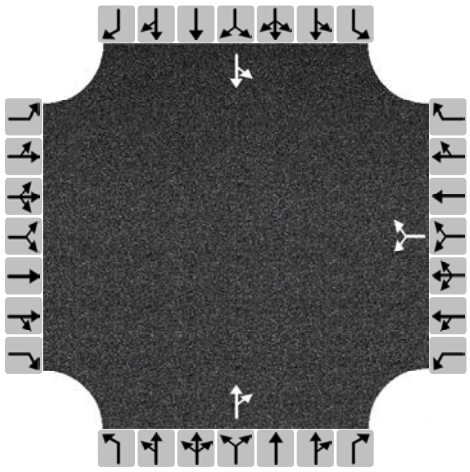
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Ruhland Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Ruhland Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				19		15		198	15	10	184	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				37			232			211		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.033			0.206			0.187		
Final Departure Headway, h_d (s)				4.72			4.19			4.26		
Final Degree of Utilization, x				0.048			0.270			0.250		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.72			2.19			2.26		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				37			232			211		
Capacity (veh/h)				763			858			844		
95% Queue Length, Q_{95} (veh)				0.2			1.1			1.0		
95% Queue Length, Q_{95} (ft)				5.1			27.9			25.4		
Control Delay (s/veh)				8.0			8.7			8.7		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				8.0		A	8.7		A	8.7		A
Intersection Delay (s/veh) | LOS	8.7						A					

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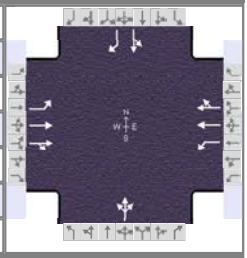
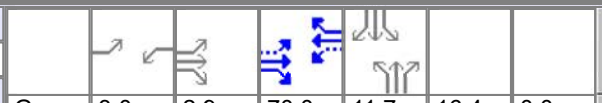
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	S Peck Ave & Artesia Blvd	File Name	S Peck Ave & Artesia Blvd_Opening Year No Proj…		
Project Description					

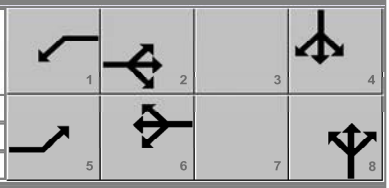


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	142	681	54	21	1160	123	118	93	8	72	24	128

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	3.0	2.9	70.0	11.7	16.4	0.0
Yellow	4.0	0.0	4.0	4.0	4.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		12.0		11.0
Phase Duration, s	9.9	76.9	7.0	74.0		20.4		15.7
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.0		3.2
Queue Clearance Time (g_s), s	5.7		2.6			16.0		11.4
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0		0.4		0.4
Phase Call Probability	0.99		0.50			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	142	372	363	21	651	632		219			96	128
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1850	1810	1900	1836		1838			1831	1610
Queue Service Time (g_s), s	3.7	11.5	11.5	0.6	26.1	26.2		14.0			6.0	9.4
Cycle Queue Clearance Time (g_c), s	3.7	11.5	11.5	0.6	26.1	26.2		14.0			6.0	9.4
Green Ratio (*g/C*)	0.64	0.61	0.61	0.61	0.58	0.58		0.14			0.10	0.10
Capacity (*c*), veh/h	309	1154	1124	469	1108	1071		251			179	157
Volume-to-Capacity Ratio (*X*)	0.459	0.322	0.323	0.045	0.588	0.590		0.874			0.538	0.815
Back of Queue (*Q*), ft/ln (95 th percentile)	61	208	204	9	416	408		270			124	175
Back of Queue (*Q*), veh/ln (95 th percentile)	2.4	8.3	8.2	0.4	16.7	16.3		10.8			5.0	7.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	0.00
Uniform Delay (d_1), s/veh	13.0	11.5	11.5	9.8	15.9	15.9		50.8			51.6	53.1
Incremental Delay (d_2), s/veh	0.4	0.7	0.8	0.0	2.3	2.4		3.9			0.9	4.0
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Control Delay (*d*), s/veh	13.4	12.2	12.3	9.8	18.2	18.3		54.7			52.5	57.1
Level of Service (LOS)	B	B	B	A	B	B		D			D	E
Approach Delay, s/veh / LOS	12.4	B		18.1	B		54.7	D		55.1	E	
Intersection Delay, s/veh / LOS	22.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.66	B	1.89	B	2.32	B	2.31	B
Bicycle LOS Score / LOS	1.21	A	1.56	B	0.85	A	0.86	A

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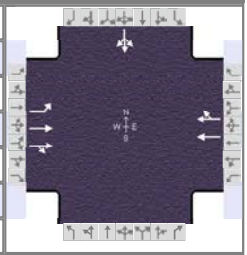
HCS Signalized Intersection Results Summary

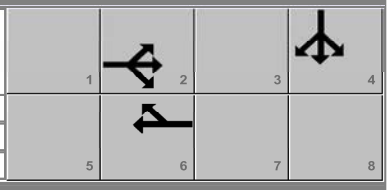
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd…	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	S Meadows Ave & Artesi…	File Name	S Meadows Ave & Artesia Blvd_Opening Year No…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	56	806	4		1323	149				100	0	69

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	98.3	13.7	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6				4
Case Number		6.0		8.0				12.0
Phase Duration, s		102.3		102.3				17.7
Change Period, (*Y+R c*), s		4.0		4.0				4.0
Max Allow Headway (*MAH*), s		0.0		0.0				3.2
Queue Clearance Time (*g s*), s								13.6
Green Extension Time (*g e*), s		0.0		0.0				0.2
Phase Call Probability								1.00
Max Out Probability								0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6	16				7	4	14
Adjusted Flow Rate (*v*), veh/h	56	405	405		746	726					169	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	365	1900	1897		1900	1832					1722	
Queue Service Time (*g s*), s	7.9	5.9	5.9		22.1	14.3					11.6	
Cycle Queue Clearance Time (*g c*), s	30.0	5.9	5.9		22.1	14.3					11.6	
Green Ratio (*g/C*)	0.82	0.82	0.82		0.82	0.82					0.11	
Capacity (*c*), veh/h	292	1556	1553		1556	1500					197	
Volume-to-Capacity Ratio (*X*)	0.192	0.261	0.261		0.479	0.484					0.857	
Back of Queue (*Q*), ft/ln (95 th percentile)	32	70	71		171	168					222	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	2.8	2.8		6.8	6.7					8.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00		0.00	0.00					0.00	
Uniform Delay (*d 1*), s/veh	9.4	2.5	2.5		3.2	3.3					52.2	
Incremental Delay (*d 2*), s/veh	1.5	0.4	0.4		1.1	1.1					4.3	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0		0.0	0.0					0.0	
Control Delay (*d*), s/veh	10.9	2.9	2.9		4.3	4.4					56.5	
Level of Service (LOS)	B	A	A		A	A					E	
Approach Delay, s/veh / LOS	3.4	A		4.3	A		0.0			56.5	E	
Intersection Delay, s/veh / LOS	7.5						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.31	A	1.60	B	2.15	B	2.32	B
Bicycle LOS Score / LOS	1.20	A	1.70	B			0.77	A

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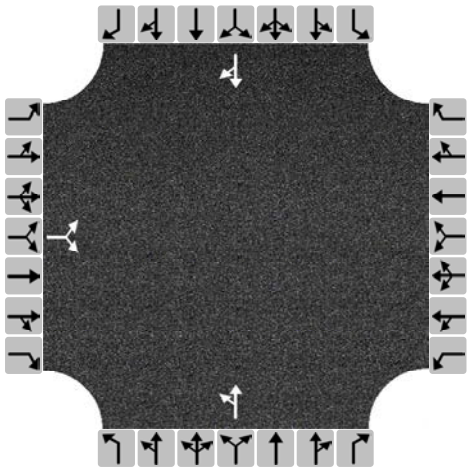
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	8:00-8:45am
Project Description	
Intersection	S Meadows Ave & Keats St
Jurisdiction	Manhattan Beach, CA
East/West Street	Keats St
North/South Street	S Meadows Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	75		63				34	103			94	99
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	150						149			210		
Percent Heavy Vehicles	2						2			2		
Initial Departure Headway, h_d (s)	3.20						3.20			3.20		
Initial Degree of Utilization, x	0.133						0.132			0.186		
Final Departure Headway, h_d (s)	4.57						4.58			4.17		
Final Degree of Utilization, x	0.190						0.189			0.243		
Move-Up Time, m (s)	2.0						2.0			2.0		
Service Time, t_s (s)	2.57						2.58			2.17		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	150						149			210		
Capacity (veh/h)	789						787			864		
95% Queue Length, Q_{95} (veh)	0.7						0.7			1.0		
95% Queue Length, Q_{95} (ft)	17.8						17.8			25.4		
Control Delay (s/veh)	8.6						8.6			8.5		
Level of Service, LOS	A						A			A		
Approach Delay (s/veh) | LOS	8.6	A					8.6	A		8.5	A	
Intersection Delay (s/veh) | LOS	8.6						A					

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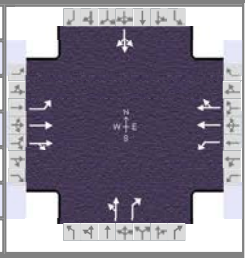
HCS Signalized Intersection Results Summary

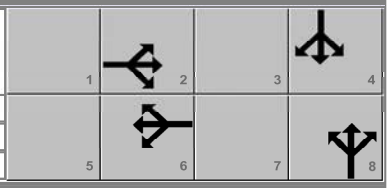
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	S Prospect Ave & Artesi…	File Name	S Prospect Ave & Artesia Blvd_Opening Year No…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	36	668	88	134	1122	123	144	72	167	29	26	34

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	92.5	19.5	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		96.5		96.5		23.5		23.5
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						18.8		7.4
Green Extension Time (g_e), s		0.0		0.0		0.6		0.9
Phase Call Probability						1.00		1.00
Max Out Probability						0.08		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	36	386	370	134	633	612		216	167		89	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	454	1900	1822	719	1900	1834		1506	1610		1666	
Queue Service Time (g_s), s	3.6	7.0	7.0	7.9	13.7	13.8		11.4	11.6		0.0	
Cycle Queue Clearance Time (g_c), s	17.3	7.0	7.0	14.9	13.7	13.8		16.8	11.6		5.4	
Green Ratio (*g/C*)	0.77	0.77	0.77	0.77	0.77	0.77		0.16	0.16		0.16	
Capacity (*c*), veh/h	358	1465	1405	573	1465	1414		294	261		310	
Volume-to-Capacity Ratio (*X*)	0.101	0.263	0.264	0.234	0.432	0.433		0.734	0.639		0.287	
Back of Queue (*Q*), ft/ln (95 th percentile)	17	102	98	53	197	194		267	205		104	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.7	4.1	3.9	2.1	7.9	7.7		10.7	8.2		4.2	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	
Uniform Delay (d_1), s/veh	7.7	3.9	3.9	6.1	4.7	4.7		49.2	47.0		44.3	
Incremental Delay (d_2), s/veh	0.6	0.4	0.5	1.0	0.9	1.0		3.6	1.0		0.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Control Delay (*d*), s/veh	8.3	4.4	4.4	7.0	5.6	5.7		52.8	48.0		44.5	
Level of Service (LOS)	A	A	A	A	A	A		D	D		D	
Approach Delay, s/veh / LOS	4.6	A		5.8	A		50.7	D		44.5	D	
Intersection Delay, s/veh / LOS	13.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.84	B	1.62	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.14	A	1.63	B	1.12	A	0.63	A

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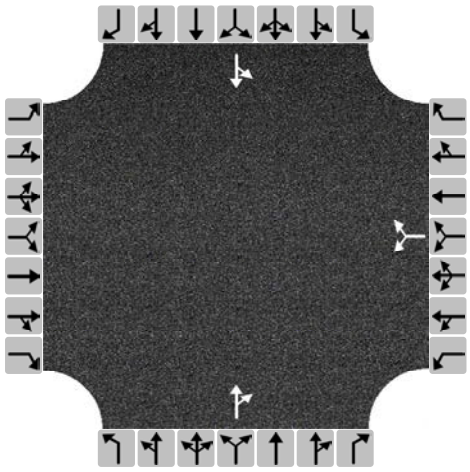
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	5:00-5:45pm
Project Description	
Intersection	S Peck Ave & Voorhees Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Voorhees Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				12		9		115	12	9	146	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				23			138			168		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.020			0.123			0.150		
Final Departure Headway, h_d (s)				4.44			4.09			4.13		
Final Degree of Utilization, x				0.028			0.157			0.193		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.44			2.09			2.13		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				23			138			168		
Capacity (veh/h)				811			880			872		
95% Queue Length, Q_{95} (veh)				0.1			0.6			0.7		
95% Queue Length, Q_{95} (ft)				2.5			15.2			17.8		
Control Delay (s/veh)				7.6			7.9			8.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.6		A	7.9		A	8.1		A
Intersection Delay (s/veh) | LOS	8.0						A					

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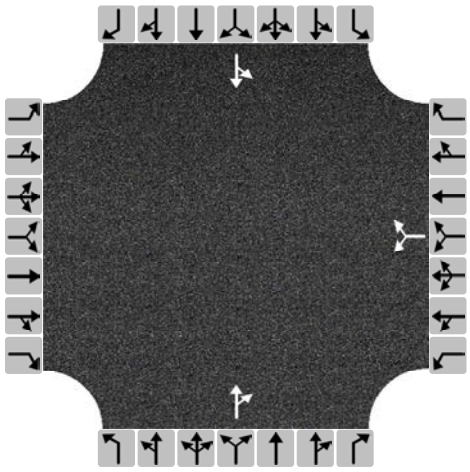
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	5:00-5:45pm
Project Description	
Intersection	S Peck Ave & Ruhland Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Ruhland Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				9		5		131	11	10	144	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				15			154			167		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.014			0.137			0.149		
Final Departure Headway, h_d (s)				4.52			4.08			4.13		
Final Degree of Utilization, x				0.019			0.175			0.192		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.52			2.08			2.13		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				15			154			167		
Capacity (veh/h)				796			882			872		
95% Queue Length, Q_{95} (veh)				0.1			0.6			0.7		
95% Queue Length, Q_{95} (ft)				2.5			15.2			17.8		
Control Delay (s/veh)				7.6			7.9			8.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.6		A	7.9		A	8.1		A
Intersection Delay (s/veh) | LOS	8.0						A					

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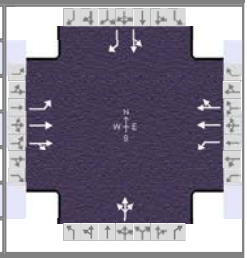
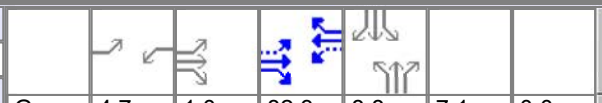
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	2> 8:00
Intersection	S Peck Ave & Artesia Blvd	File Name	S Peck Ave & Artesia Blvd_Opening Year No Proj…		
Project Description					

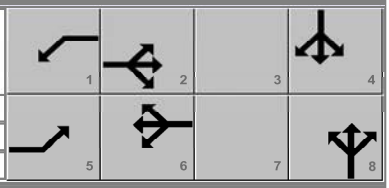


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	99	1053	160	47	782	30	59	22	3	37	42	90

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	4.7	1.0	82.3	8.8	7.1	0.0
Yellow	4.0	0.0	4.0	4.0	4.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		12.0		11.0
Phase Duration, s	9.8	87.3	8.7	86.3		11.1		12.8
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.1		3.2
Queue Clearance Time (g_s), s	3.8		2.9			7.4		8.6
Green Extension Time (g_e), s	0.2	0.0	0.1	0.0		0.1		0.3
Phase Call Probability	0.96		0.79			0.94		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	99	620	593	47	409	403		84			79	90
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1812	1810	1900	1875		1824			1857	1610
Queue Service Time (g_s), s	1.8	17.8	17.8	0.9	10.3	10.3		5.4			4.9	6.6
Cycle Queue Clearance Time (g_c), s	1.8	17.8	17.8	0.9	10.3	10.3		5.4			4.9	6.6
Green Ratio (*g/C*)	0.73	0.69	0.69	0.73	0.69	0.69		0.06			0.07	0.07
Capacity (*c*), veh/h	556	1319	1258	379	1303	1286		108			136	118
Volume-to-Capacity Ratio (*X*)	0.178	0.470	0.471	0.124	0.314	0.314		0.776			0.579	0.761
Back of Queue (*Q*), ft/ln (95 th percentile)	26	275	267	13	177	176		117			105	124
Back of Queue (*Q*), veh/ln (95 th percentile)	1.1	11.0	10.7	0.5	7.1	7.0		4.7			4.2	4.9
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	0.00
Uniform Delay (d_1), s/veh	5.0	8.3	8.3	6.3	7.5	7.6		55.7			53.8	54.6
Incremental Delay (d_2), s/veh	0.1	1.2	1.3	0.1	0.6	0.6		4.6			1.5	3.9
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Control Delay (*d*), s/veh	5.1	9.5	9.6	6.3	8.2	8.2		60.2			55.3	58.4
Level of Service (LOS)	A	A	A	A	A	A		E			E	E
Approach Delay, s/veh / LOS	9.2	A		8.1	A		60.2	E		56.9	E	
Intersection Delay, s/veh / LOS	13.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.87	B	2.32	B	2.32	B
Bicycle LOS Score / LOS	1.57	B	1.20	A	0.63	A	0.77	A

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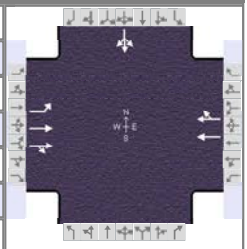
HCS Signalized Intersection Results Summary

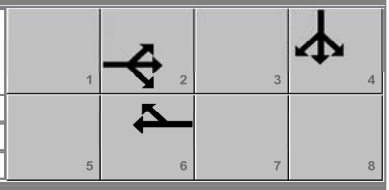
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd…	Analysis Year	2025	Analysis Period	2> 8:00
Intersection	S Meadows Ave & Artesi…	File Name	S Meadows Ave & Artesia Blvd_Opening Year No…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	73	1188	5		860	71				127	0	84

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	95.3	16.7	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6				4
Case Number		6.0		8.0				12.0
Phase Duration, s		99.3		99.3				20.7
Change Period, (*Y+R c*), s		4.0		4.0				4.0
Max Allow Headway (*MAH*), s		0.0		0.0				3.2
Queue Clearance Time (*g s*), s								16.4
Green Extension Time (*g e*), s		0.0		0.0				0.3
Phase Call Probability								1.00
Max Out Probability								0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6	16				7	4	14
Adjusted Flow Rate (*v*), veh/h	73	597	596		472	459					211	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	611	1900	1897		1900	1849					1725	
Queue Service Time (*g s*), s	4.9	11.3	11.3		11.2	8.1					14.4	
Cycle Queue Clearance Time (*g c*), s	16.1	11.3	11.3		11.2	8.1					14.4	
Green Ratio (*g/C*)	0.79	0.79	0.79		0.79	0.79					0.14	
Capacity (*c*), veh/h	488	1510	1507		1510	1469					239	
Volume-to-Capacity Ratio (*X*)	0.150	0.395	0.395		0.313	0.313					0.881	
Back of Queue (*Q*), ft/ln (95 th percentile)	29	152	153		109	107					277	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.1	6.1	6.1		4.3	4.3					11.1	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00		0.00	0.00					0.00	
Uniform Delay (*d 1*), s/veh	6.1	3.7	3.7		3.4	3.4					50.7	
Incremental Delay (*d 2*), s/veh	0.6	0.8	0.8		0.5	0.6					10.6	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0		0.0	0.0					0.0	
Control Delay (*d*), s/veh	6.7	4.5	4.5		3.9	3.9					61.3	
Level of Service (LOS)	A	A	A		A	A					E	
Approach Delay, s/veh / LOS	4.6	A		3.9	A		0.0			61.3	E	
Intersection Delay, s/veh / LOS	9.3						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.32	A	1.61	B	2.15	B	2.32	B
Bicycle LOS Score / LOS	1.53	B	1.26	A			0.84	A

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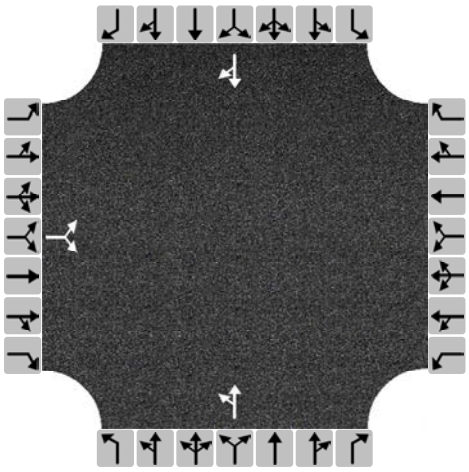
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	4:30-5:15pm
Project Description	
Intersection	S Meadows Ave & Keats St
Jurisdiction	Manhattan Beach, CA
East/West Street	Keats St
North/South Street	S Meadows Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	79		76				18	107			158	88
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	168						136			267		
Percent Heavy Vehicles	2						2			2		
Initial Departure Headway, h_d (s)	3.20						3.20			3.20		
Initial Degree of Utilization, x	0.150						0.121			0.238		
Final Departure Headway, h_d (s)	4.65						4.68			4.30		
Final Degree of Utilization, x	0.218						0.177			0.320		
Move-Up Time, m (s)	2.0						2.0			2.0		
Service Time, t_s (s)	2.65						2.68			2.30		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	168						136			267		
Capacity (veh/h)	774						769			836		
95% Queue Length, Q_{95} (veh)	0.8						0.6			1.4		
95% Queue Length, Q_{95} (ft)	20.3						15.2			35.6		
Control Delay (s/veh)	8.9						8.7			9.3		
Level of Service, LOS	A						A			A		
Approach Delay (s/veh) | LOS	8.9	A					8.7	A		9.3	A	
Intersection Delay (s/veh) | LOS	9.1						A					

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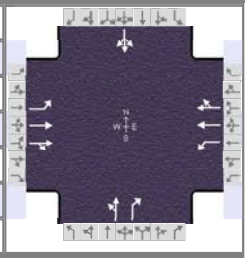
HCS Signalized Intersection Results Summary

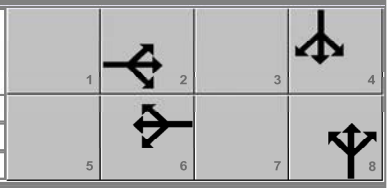
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	2> 8:00
Intersection	S Prospect Ave & Artesi…	File Name	S Prospect Ave & Artesia Blvd_Opening Year No…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	34	1041	182	131	800	16	136	39	154	72	98	36

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	90.3	21.7	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		94.3		94.3		25.7		25.7
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						21.1		15.4
Green Extension Time (g_e), s		0.0		0.0		0.6		0.9
Phase Call Probability						1.00		1.00
Max Out Probability						0.37		0.02

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	34	627	596	131	409	407		175	154		206	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	680	1900	1801	463	1900	1887		1113	1610		1700	
Queue Service Time (g_s), s	2.0	14.6	14.7	17.5	8.1	8.1		5.7	10.4		0.0	
Cycle Queue Clearance Time (g_c), s	10.1	14.6	14.7	32.2	8.1	8.1		19.1	10.4		13.4	
Green Ratio (*g/C*)	0.75	0.75	0.75	0.75	0.75	0.75		0.18	0.18		0.18	
Capacity (*c*), veh/h	526	1430	1356	352	1430	1420		254	291		347	
Volume-to-Capacity Ratio (*X*)	0.065	0.438	0.440	0.372	0.286	0.286		0.688	0.530		0.593	
Back of Queue (*Q*), ft/ln (95 th percentile)	13	216	209	87	124	123		226	186		240	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5	8.6	8.3	3.5	4.9	4.9		9.1	7.4		9.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	
Uniform Delay (d_1), s/veh	6.3	5.5	5.5	11.4	4.7	4.7		48.9	44.6		45.7	
Incremental Delay (d_2), s/veh	0.2	1.0	1.0	3.0	0.5	0.5		3.4	0.6		0.7	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Control Delay (*d*), s/veh	6.5	6.5	6.5	14.4	5.2	5.2		52.3	45.1		46.4	
Level of Service (LOS)	A	A	A	B	A	A		D	D		D	
Approach Delay, s/veh / LOS	6.5	A		6.5	A		48.9	D		46.4	D	
Intersection Delay, s/veh / LOS	14.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.85	B	1.62	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.52	B	1.27	A	1.03	A	0.83	A

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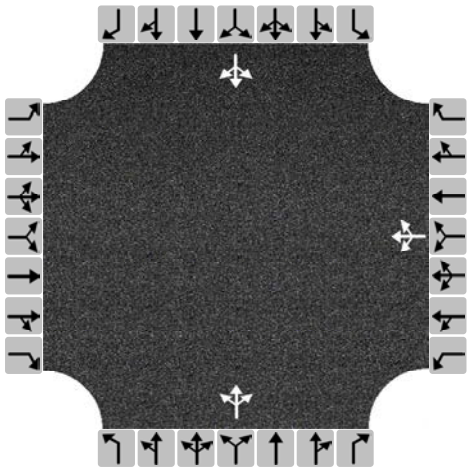
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Nelson Ave-Driveway 1(A)
Jurisdiction	Manhattan Beach, CA
East/West Street	Nelson Ave-Driveway 1(A)
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				27	37	37	67	167	21	23	128	64
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				110			277			234		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.098			0.246			0.208		
Final Departure Headway, h_d (s)				4.91			4.48			4.37		
Final Degree of Utilization, x				0.150			0.345			0.284		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.91			2.48			2.37		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				110			277			234		
Capacity (veh/h)				734			803			823		
95% Queue Length, Q_{95} (veh)				0.5			1.6			1.2		
95% Queue Length, Q_{95} (ft)				12.7			40.6			30.5		
Control Delay (s/veh)				8.8			9.8			9.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				8.8		A	9.8		A	9.1		A
Intersection Delay (s/veh) | LOS	9.4						A					

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HCS Two-Way Stop-Control Report

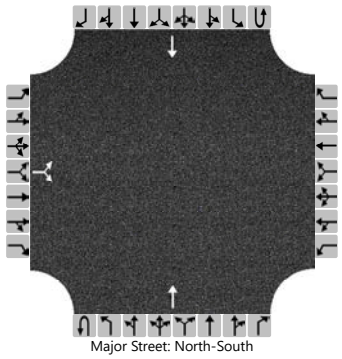
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	7:45-8:30am
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 2(B)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 2(B)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								T				T	
Volume (veh/h)		18		66							238				156	
Percent Heavy Vehicles (%)		0		0												
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2												
Critical Headway (sec)		6.40		6.20												
Base Follow-Up Headway (sec)		3.5		3.3												
Follow-Up Headway (sec)		3.50		3.30												

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			91													
Capacity, c (veh/h)			795													
v/c Ratio			0.11													
95% Queue Length, Q_{95} (veh)			0.4													
95% Queue Length, Q_{95} (ft)			10.0													
Control Delay (s/veh)			10.1													
Level of Service (LOS)			B													
Approach Delay (s/veh)		10.1														
Approach LOS		B														

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HCS Two-Way Stop-Control Report

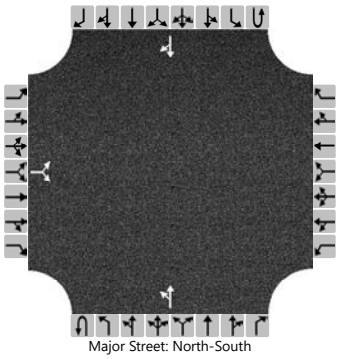
General Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Time Analyzed	7:45-8:30am
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 3(C)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 3(C)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		5		3						89	274				224	24
Percent Heavy Vehicles (%)		0		0						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9							97						
Capacity, c (veh/h)			441							1288						
v/c Ratio			0.02							0.08						
95% Queue Length, Q_{95} (veh)			0.1							0.2						
95% Queue Length, Q_{95} (ft)			2.5							5.1						
Control Delay (s/veh)			13.3							8.0	0.7					
Level of Service (LOS)			B							A	A					
Approach Delay (s/veh)		13.3								2.5						
Approach LOS		B								A						

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HCS Two-Way Stop-Control Report

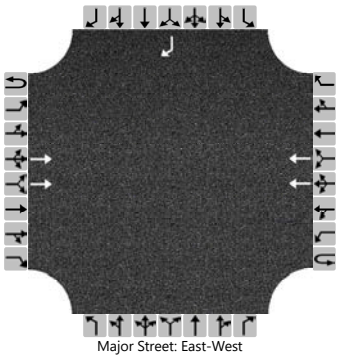
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	8:00-8:45am
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 4(D)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 4(D)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T									R
Volume (veh/h)			881				1408									38
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																41
Capacity, c (veh/h)																344
v/c Ratio																0.12
95% Queue Length, Q_{95} (veh)																0.4
95% Queue Length, Q_{95} (ft)																10.2
Control Delay (s/veh)																16.9
Level of Service (LOS)																C
Approach Delay (s/veh)													16.9			
Approach LOS													C			

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HCS Two-Way Stop-Control Report

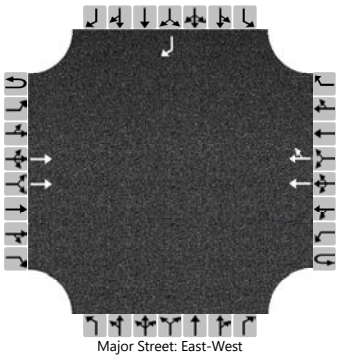
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	8:00-8:45am
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 5(E)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 5(E)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T	TR								R
Volume (veh/h)			877				1384	63								37
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																40
Capacity, c (veh/h)																333
v/c Ratio																0.12
95% Queue Length, Q_{95} (veh)																0.4
95% Queue Length, Q_{95} (ft)																10.2
Control Delay (s/veh)																17.3
Level of Service (LOS)																C
Approach Delay (s/veh)													17.3			
Approach LOS													C			

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HCS Two-Way Stop-Control Report

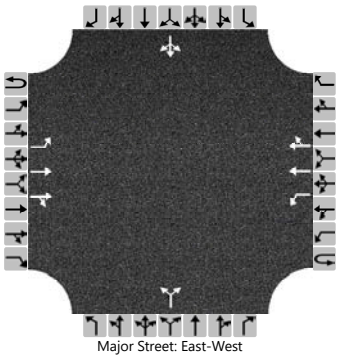
General Information

Analyst	
Agency/Co.	
Date Performed	9/2/2025
Analysis Year	2025
Time Analyzed	8:00-8:45AM
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Stanford Ave amd Artesia Blvd
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Standford Ave/Driveway F
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LR				LTR	
Volume (veh/h)	0	79	834	16	0	26	1391	6		4		29		5	1	76
Percent Heavy Vehicles (%)	3	3			3	3				3		3		0	0	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5		6.9		7.5	6.5	6.9
Critical Headway (sec)		4.16				4.16				7.56		6.96		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5		3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53		3.33		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		86				28					36				89	
Capacity, c (veh/h)		431				729					328				246	
v/c Ratio		0.20				0.04					0.11				0.36	
95% Queue Length, Q_{95} (veh)		0.7				0.1					0.4				1.7	
95% Queue Length, Q_{95} (ft)		17.9				2.6					10.2				42.5	
Control Delay (s/veh)		15.4				10.1					17.3				27.9	
Level of Service (LOS)		C				B					C				D	
Approach Delay (s/veh)	1.3				0.2				17.3				27.9			
Approach LOS	A				A				C				D			

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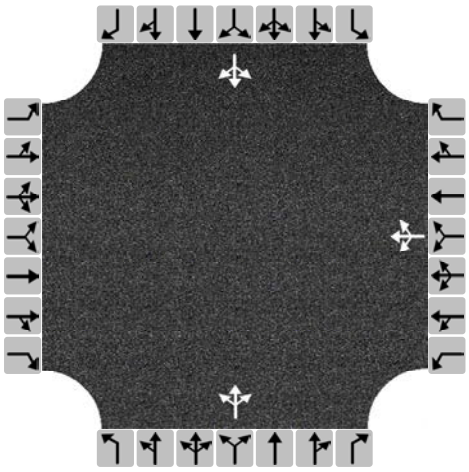
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	5:00-5:45pm
Project Description	
Intersection	S Peck Ave & Nelson Ave-Driveway 1(A)
Jurisdiction	Manhattan Beach, CA
East/West Street	Nelson Ave-Driveway 1(A)
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				16	13	5	22	137	9	8	119	27
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				37			183			167		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.033			0.162			0.149		
Final Departure Headway, h_d (s)				4.68			4.18			4.11		
Final Degree of Utilization, x				0.048			0.212			0.191		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.68			2.18			2.11		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				37			183			167		
Capacity (veh/h)				770			861			876		
95% Queue Length, Q_{95} (veh)				0.2			0.8			0.7		
95% Queue Length, Q_{95} (ft)				5.1			20.3			17.8		
Control Delay (s/veh)				7.9			8.3			8.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.9		A	8.3		A	8.1		A
Intersection Delay (s/veh) | LOS	8.2						A					

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HCS Two-Way Stop-Control Report

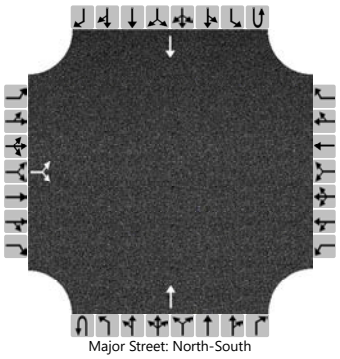
General Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Time Analyzed	4:00-4:45pm
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 2(B)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 2(B)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								T				T	
Volume (veh/h)		10		41							142				162	
Percent Heavy Vehicles (%)		0		0												
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2												
Critical Headway (sec)		6.40		6.20												
Base Follow-Up Headway (sec)		3.5		3.3												
Follow-Up Headway (sec)		3.50		3.30												

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			55													
Capacity, c (veh/h)			823													
v/c Ratio			0.07													
95% Queue Length, Q_{95} (veh)			0.2													
95% Queue Length, Q_{95} (ft)			5.0													
Control Delay (s/veh)			9.7													
Level of Service (LOS)			A													
Approach Delay (s/veh)		9.7														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

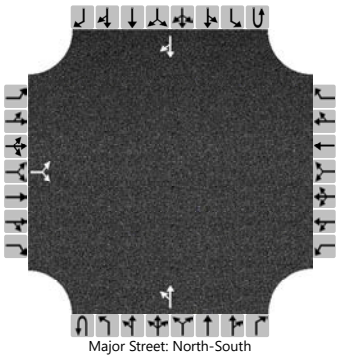
General Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Time Analyzed	4:00-4:45pm
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 3(C)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 3(C)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		6		8						4	147				203	5
Percent Heavy Vehicles (%)		0		0						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			15							4						
Capacity, c (veh/h)			717							1336						
v/c Ratio			0.02							0.00						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
95% Queue Length, Q_{95} (ft)			2.5							0.0						
Control Delay (s/veh)			10.1							7.7	0.0					
Level of Service (LOS)			B							A	A					
Approach Delay (s/veh)		10.1								0.2						
Approach LOS		B								A						

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HCS Two-Way Stop-Control Report

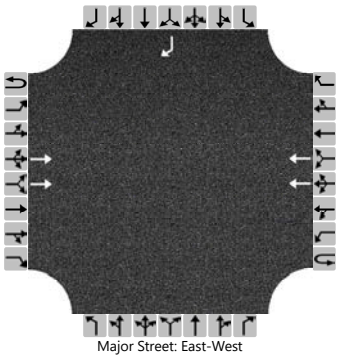
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	4:15-5:00pm
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 4(D)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 4(D)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T									R
Volume (veh/h)			1321				935									11
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																12
Capacity, c (veh/h)																507
v/c Ratio																0.02
95% Queue Length, Q_{95} (veh)																0.1
95% Queue Length, Q_{95} (ft)																2.6
Control Delay (s/veh)																12.3
Level of Service (LOS)																B
Approach Delay (s/veh)													12.3			
Approach LOS													B			

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HCS Two-Way Stop-Control Report

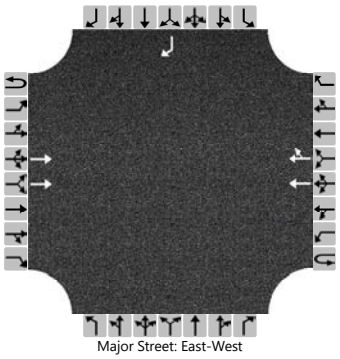
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	4:15-5:00pm
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 5(E)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 5(E)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T	TR								R
Volume (veh/h)			1315				942	2								7
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																8
Capacity, c (veh/h)																504
v/c Ratio																0.02
95% Queue Length, Q_{95} (veh)																0.0
95% Queue Length, Q_{95} (ft)																0.0
Control Delay (s/veh)																12.3
Level of Service (LOS)																B
Approach Delay (s/veh)													12.3			
Approach LOS													B			

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HCS Two-Way Stop-Control Report

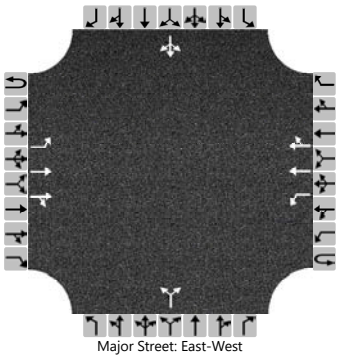
General Information

Analyst	
Agency/Co.	
Date Performed	9/2/2025
Analysis Year	2025
Time Analyzed	4:15-5:00PM
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Stanford Ave and Artesia Blvd
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Stanford Ave/Driveway F
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LR				LTR	
Volume (veh/h)	0	3	1284	31	0	29	915	3		5		14		3	0	6
Percent Heavy Vehicles (%)	3	3			3	3				3		3		0	0	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5		6.9		7.5	6.5	6.9
Critical Headway (sec)		4.16				4.16				7.56		6.96		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5		3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53		3.33		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3				32					21				10	
Capacity, c (veh/h)		683				466					226				279	
v/c Ratio		0.00				0.07					0.09				0.04	
95% Queue Length, Q_{95} (veh)		0.0				0.2					0.3				0.1	
95% Queue Length, Q_{95} (ft)		0.0				5.1					7.7				2.5	
Control Delay (s/veh)		10.3				13.3					22.5				18.4	
Level of Service (LOS)		B				B					C				C	
Approach Delay (s/veh)	0.0				0.4				22.5				18.4			
Approach LOS	A				A				C				C			

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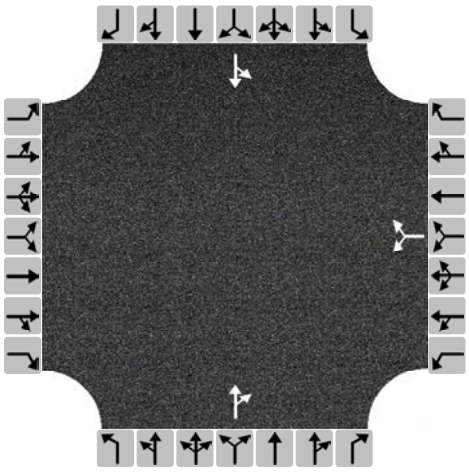
Appendix F—Synchro Reports [2026 With Project]

HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Vorhees Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Vorhees Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				8		14		203	10	26	196	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				24			232			241		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.021			0.206			0.214		
Final Departure Headway, h_d (s)				4.62			4.20			4.24		
Final Degree of Utilization, x				0.031			0.270			0.284		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.62			2.20			2.24		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				24			232			241		
Capacity (veh/h)				779			857			849		
95% Queue Length, Q_{95} (veh)				0.1			1.1			1.2		
95% Queue Length, Q_{95} (ft)				2.5			27.9			30.5		
Control Delay (s/veh)				7.8			8.8			8.9		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.8		A	8.8		A	8.9		A
Intersection Delay (s/veh) | LOS	8.8						A					

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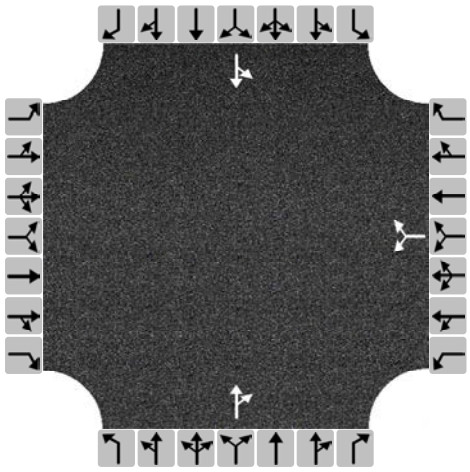
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Ruhland Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Ruhland Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				19		15		198	15	10	184	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				37			232			211		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.033			0.206			0.187		
Final Departure Headway, h_d (s)				4.72			4.19			4.26		
Final Degree of Utilization, x				0.048			0.270			0.250		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.72			2.19			2.26		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				37			232			211		
Capacity (veh/h)				763			858			844		
95% Queue Length, Q_{95} (veh)				0.2			1.1			1.0		
95% Queue Length, Q_{95} (ft)				5.1			27.9			25.4		
Control Delay (s/veh)				8.0			8.7			8.7		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				8.0		A	8.7		A	8.7		A
Intersection Delay (s/veh) | LOS	8.7						A					

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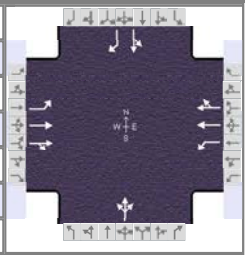
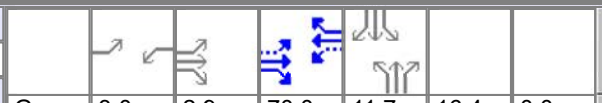
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	S Peck Ave & Artesia Blvd	File Name	S Peck Ave & Artesia Blvd_Opening Year With Pr…		
Project Description					

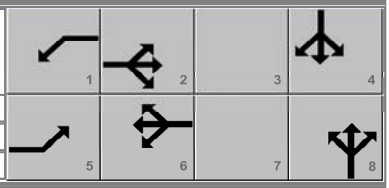


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	142	681	54	21	1160	123	118	93	8	72	24	128

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	3.0	2.9	70.0	11.7	16.4	0.0
Yellow	4.0	0.0	4.0	4.0	4.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		12.0		11.0
Phase Duration, s	9.9	76.9	7.0	74.0		20.4		15.7
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.0		3.2
Queue Clearance Time (g_s), s	5.7		2.6			16.0		11.4
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0		0.4		0.4
Phase Call Probability	0.99		0.50			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	142	372	363	21	651	632		219			96	128
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1850	1810	1900	1836		1838			1831	1610
Queue Service Time (g_s), s	3.7	11.5	11.5	0.6	26.1	26.2		14.0			6.0	9.4
Cycle Queue Clearance Time (g_c), s	3.7	11.5	11.5	0.6	26.1	26.2		14.0			6.0	9.4
Green Ratio (*g/C*)	0.64	0.61	0.61	0.61	0.58	0.58		0.14			0.10	0.10
Capacity (*c*), veh/h	309	1154	1124	469	1108	1071		251			179	157
Volume-to-Capacity Ratio (*X*)	0.459	0.322	0.323	0.045	0.588	0.590		0.874			0.538	0.815
Back of Queue (*Q*), ft/ln (95 th percentile)	61	208	204	9	416	408		270			124	175
Back of Queue (*Q*), veh/ln (95 th percentile)	2.4	8.3	8.2	0.4	16.7	16.3		10.8			5.0	7.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	0.00
Uniform Delay (d_1), s/veh	13.0	11.5	11.5	9.8	15.9	15.9		50.8			51.6	53.1
Incremental Delay (d_2), s/veh	0.4	0.7	0.8	0.0	2.3	2.4		3.9			0.9	4.0
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Control Delay (*d*), s/veh	13.4	12.2	12.3	9.8	18.2	18.3		54.7			52.5	57.1
Level of Service (LOS)	B	B	B	A	B	B		D			D	E
Approach Delay, s/veh / LOS	12.4	B		18.1	B		54.7	D		55.1	E	
Intersection Delay, s/veh / LOS	22.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.66	B	1.89	B	2.32	B	2.31	B
Bicycle LOS Score / LOS	1.21	A	1.56	B	0.85	A	0.86	A

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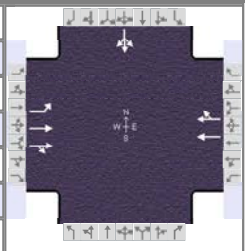
HCS Signalized Intersection Results Summary

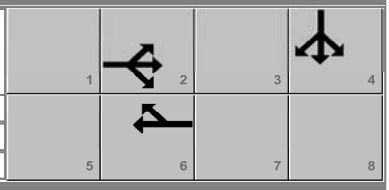
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd…	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	S Meadows Ave & Artesi…	File Name	S Meadows Ave & Artesia Blvd_Opening Year Wit…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	57	806	4		1323	149				100	0	70

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	98.2	13.8	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6				4
Case Number		6.0		8.0				12.0
Phase Duration, s		102.2		102.2				17.8
Change Period, (*Y+R c*), s		4.0		4.0				4.0
Max Allow Headway (*MAH*), s		0.0		0.0				3.2
Queue Clearance Time (*g s*), s								13.6
Green Extension Time (*g e*), s		0.0		0.0				0.2
Phase Call Probability								1.00
Max Out Probability								0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6	16				7	4	14
Adjusted Flow Rate (*v*), veh/h	57	405	405		746	726					170	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	365	1900	1897		1900	1832					1722	
Queue Service Time (*g s*), s	8.1	5.9	5.9		22.1	14.3					11.6	
Cycle Queue Clearance Time (*g c*), s	30.2	5.9	5.9		22.1	14.3					11.6	
Green Ratio (*g/C*)	0.82	0.82	0.82		0.82	0.82					0.12	
Capacity (*c*), veh/h	292	1555	1552		1555	1499					198	
Volume-to-Capacity Ratio (*X*)	0.195	0.261	0.261		0.480	0.484					0.858	
Back of Queue (*Q*), ft/ln (95 th percentile)	32	71	71		172	169					222	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	2.8	2.8		6.9	6.8					8.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00		0.00	0.00					0.00	
Uniform Delay (*d 1*), s/veh	9.5	2.5	2.5		3.3	3.3					52.1	
Incremental Delay (*d 2*), s/veh	1.5	0.4	0.4		1.1	1.1					4.3	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0		0.0	0.0					0.0	
Control Delay (*d*), s/veh	11.0	2.9	2.9		4.3	4.4					56.4	
Level of Service (LOS)	B	A	A		A	A					E	
Approach Delay, s/veh / LOS	3.5	A		4.4	A		0.0			56.4	E	
Intersection Delay, s/veh / LOS	7.6						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.31	A	1.60	B	2.15	B	2.32	B
Bicycle LOS Score / LOS	1.20	A	1.70	B			0.77	A

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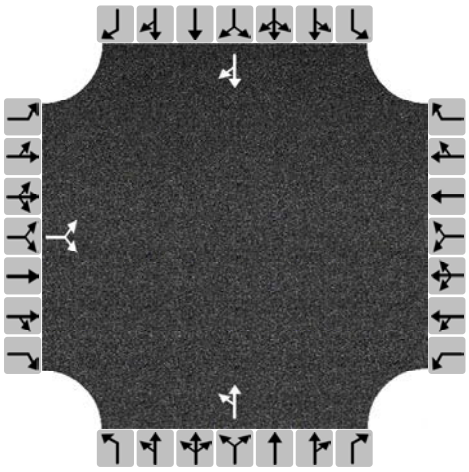
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	8:00-8:45am
Project Description	
Intersection	S Meadows Ave & Keats St
Jurisdiction	Manhattan Beach, CA
East/West Street	Keats St
North/South Street	S Meadows Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	75		63				34	103			94	99
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	150						149			210		
Percent Heavy Vehicles	2						2			2		
Initial Departure Headway, h_d (s)	3.20						3.20			3.20		
Initial Degree of Utilization, x	0.133						0.132			0.186		
Final Departure Headway, h_d (s)	4.57						4.58			4.17		
Final Degree of Utilization, x	0.190						0.189			0.243		
Move-Up Time, m (s)	2.0						2.0			2.0		
Service Time, t_s (s)	2.57						2.58			2.17		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	150						149			210		
Capacity (veh/h)	789						787			864		
95% Queue Length, Q_{95} (veh)	0.7						0.7			1.0		
95% Queue Length, Q_{95} (ft)	17.8						17.8			25.4		
Control Delay (s/veh)	8.6						8.6			8.5		
Level of Service, LOS	A						A			A		
Approach Delay (s/veh) | LOS	8.6	A					8.6	A		8.5	A	
Intersection Delay (s/veh) | LOS	8.6						A					

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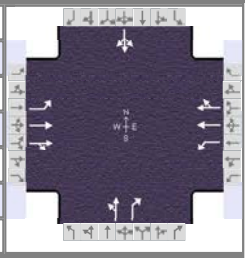
HCS Signalized Intersection Results Summary

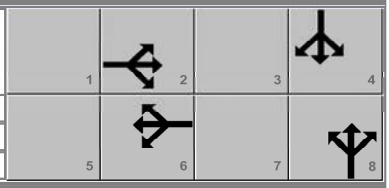
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	S Prospect Ave & Artesi…	File Name	S Prospect Ave & Artesia Blvd_Opening Year Wit…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	36	669	88	134	1123	123	144	72	167	29	26	34

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	92.5	19.5	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		96.5		96.5		23.5		23.5
Change Period, (*Y+R c*), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (*g s*), s						18.8		7.4
Green Extension Time (*g e*), s		0.0		0.0		0.6		0.9
Phase Call Probability						1.00		1.00
Max Out Probability						0.08		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	36	386	371	134	633	613		216	167		89	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	453	1900	1822	719	1900	1834		1506	1610		1666	
Queue Service Time (*g s*), s	3.6	7.0	7.0	7.9	13.7	13.8		11.4	11.6		0.0	
Cycle Queue Clearance Time (*g c*), s	17.3	7.0	7.0	14.9	13.7	13.8		16.8	11.6		5.4	
Green Ratio (*g/C*)	0.77	0.77	0.77	0.77	0.77	0.77		0.16	0.16		0.16	
Capacity (*c*), veh/h	357	1465	1405	572	1465	1414		294	261		310	
Volume-to-Capacity Ratio (*X*)	0.101	0.263	0.264	0.234	0.432	0.433		0.734	0.639		0.287	
Back of Queue (*Q*), ft/ln (95 th percentile)	17	102	98	53	198	194		267	205		104	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.7	4.1	3.9	2.1	7.9	7.7		10.7	8.2		4.2	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	
Uniform Delay (*d 1*), s/veh	7.7	3.9	3.9	6.1	4.7	4.7		49.2	47.0		44.3	
Incremental Delay (*d 2*), s/veh	0.6	0.4	0.5	1.0	0.9	1.0		3.6	1.0		0.2	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Control Delay (*d*), s/veh	8.3	4.4	4.4	7.1	5.6	5.7		52.8	48.0		44.5	
Level of Service (LOS)	A	A	A	A	A	A		D	D		D	
Approach Delay, s/veh / LOS	4.6	A		5.8	A		50.7	D		44.5	D	
Intersection Delay, s/veh / LOS	13.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.84	B	1.62	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.14	A	1.63	B	1.12	A	0.63	A

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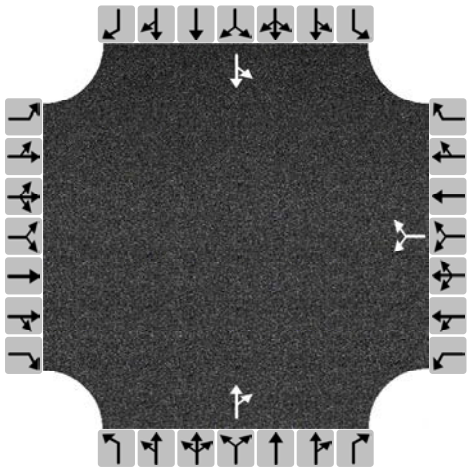
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	5:00-5:45pm
Project Description	
Intersection	S Peck Ave & Voorhees Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Voorhees Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				12		9		116	12	9	147	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				23			139			170		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.020			0.124			0.151		
Final Departure Headway, h_d (s)				4.44			4.09			4.13		
Final Degree of Utilization, x				0.028			0.158			0.195		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.44			2.09			2.13		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				23			139			170		
Capacity (veh/h)				810			879			871		
95% Queue Length, Q_{95} (veh)				0.1			0.6			0.7		
95% Queue Length, Q_{95} (ft)				2.5			15.2			17.8		
Control Delay (s/veh)				7.6			7.9			8.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.6		A	7.9		A	8.1		A
Intersection Delay (s/veh) | LOS	8.0						A					

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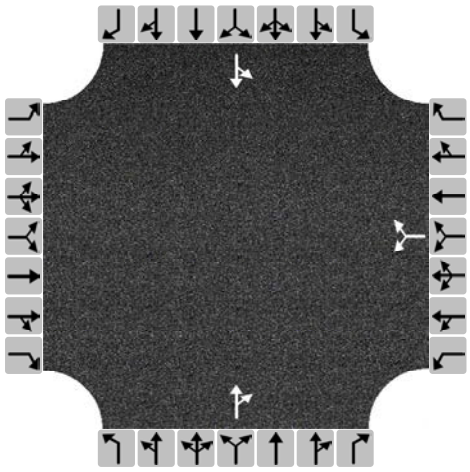
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	5:00-5:45pm
Project Description	
Intersection	S Peck Ave & Ruhland Ave
Jurisdiction	Manhattan Beach, CA
East/West Street	Ruhland Ave
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				9		5		132	11	10	145	
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				15			155			168		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.014			0.138			0.150		
Final Departure Headway, h_d (s)				4.53			4.08			4.13		
Final Degree of Utilization, x				0.019			0.176			0.193		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.53			2.08			2.13		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LR			TR			LT		
Flow Rate, v (veh/h)				15			155			168		
Capacity (veh/h)				795			881			872		
95% Queue Length, Q_{95} (veh)				0.1			0.6			0.7		
95% Queue Length, Q_{95} (ft)				2.5			15.2			17.8		
Control Delay (s/veh)				7.6			8.0			8.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.6		A	8.0		A	8.1		A
Intersection Delay (s/veh) | LOS	8.0						A					

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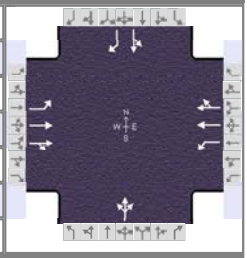
HCS Signalized Intersection Results Summary

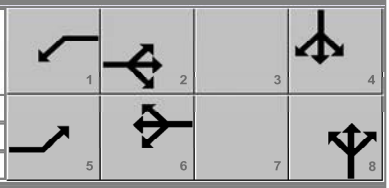
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	2> 8:00
Intersection	S Peck Ave & Artesia Blvd	File Name	S Peck Ave & Artesia Blvd_Opening Year With Pr…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	101	1056	160	47	789	32	59	23	3	38	43	91

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	4.7	1.0		82.1	8.9	7.2	0.0					
Yellow	4.0	0.0		4.0	4.0	4.0	0.0					
Red	0.0	0.0		0.0	0.0	0.0	0.0					



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		12.0		11.0
Phase Duration, s	9.8	87.2	8.7	86.1		11.2		12.9
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.1		3.2
Queue Clearance Time (g_s), s	3.9		2.9			7.5		8.7
Green Extension Time (g_e), s	0.2	0.0	0.1	0.0		0.1		0.3
Phase Call Probability	0.97		0.79			0.94		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	101	622	594	47	413	408		85			81	91
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1812	1810	1900	1874		1825			1856	1610
Queue Service Time (g_s), s	1.9	17.9	18.0	0.9	10.5	10.5		5.5			5.1	6.7
Cycle Queue Clearance Time (g_c), s	1.9	17.9	18.0	0.9	10.5	10.5		5.5			5.1	6.7
Green Ratio (*g/C*)	0.73	0.69	0.69	0.72	0.68	0.68		0.06			0.07	0.07
Capacity (*c*), veh/h	551	1317	1256	377	1300	1282		109			138	119
Volume-to-Capacity Ratio (*X*)	0.183	0.472	0.473	0.125	0.318	0.318		0.777			0.589	0.762
Back of Queue (*Q*), ft/ln (95 th percentile)	27	278	269	13	182	179		119			108	125
Back of Queue (*Q*), veh/ln (95 th percentile)	1.1	11.1	10.8	0.5	7.3	7.2		4.7			4.3	5.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	0.00
Uniform Delay (d_1), s/veh	5.1	8.4	8.4	6.4	7.6	7.6		55.6			53.8	54.5
Incremental Delay (d_2), s/veh	0.1	1.2	1.3	0.1	0.6	0.7		4.5			1.5	3.8
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Control Delay (*d*), s/veh	5.1	9.6	9.7	6.4	8.3	8.3		60.2			55.3	58.4
Level of Service (LOS)	A	A	A	A	A	A		E			E	E
Approach Delay, s/veh / LOS	9.3	A		8.2	A		60.2	E		56.9	E	
Intersection Delay, s/veh / LOS	14.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.87	B	2.32	B	2.32	B
Bicycle LOS Score / LOS	1.57	B	1.20	A	0.63	A	0.77	A

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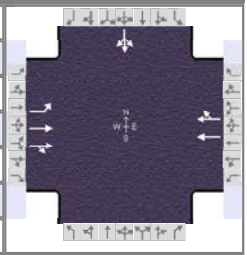
HCS Signalized Intersection Results Summary

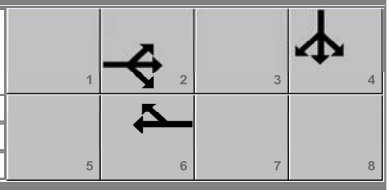
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd…	Analysis Year	2025	Analysis Period	2> 8:00
Intersection	S Meadows Ave & Artesi…	File Name	S Meadows Ave & Artesia Blvd_Opening Year Wit…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	79	1190	5		861	78				130	0	87

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	94.9	17.1	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6				4
Case Number		6.0		8.0				12.0
Phase Duration, s		98.9		98.9				21.1
Change Period, (*Y+R c*), s		4.0		4.0				4.0
Max Allow Headway (*MAH*), s		0.0		0.0				3.2
Queue Clearance Time (*g s*), s								16.8
Green Extension Time (*g e*), s		0.0		0.0				0.3
Phase Call Probability								1.00
Max Out Probability								0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6	16				7	4	14
Adjusted Flow Rate (*v*), veh/h	79	598	597		477	462					217	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	606	1900	1897		1900	1844					1724	
Queue Service Time (*g s*), s	5.5	11.5	11.5		11.4	8.4					14.8	
Cycle Queue Clearance Time (*g c*), s	16.8	11.5	11.5		11.4	8.4					14.8	
Green Ratio (*g/C*)	0.79	0.79	0.79		0.79	0.79					0.14	
Capacity (*c*), veh/h	482	1503	1501		1503	1459					245	
Volume-to-Capacity Ratio (*X*)	0.164	0.398	0.398		0.317	0.317					0.884	
Back of Queue (*Q*), ft/ln (95 th percentile)	32	157	157		114	111					287	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	6.3	6.3		4.6	4.4					11.5	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00		0.00	0.00					0.00	
Uniform Delay (*d 1*), s/veh	6.4	3.8	3.8		3.5	3.5					50.5	
Incremental Delay (*d 2*), s/veh	0.7	0.8	0.8		0.6	0.6					12.1	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0		0.0	0.0					0.0	
Control Delay (*d*), s/veh	7.1	4.6	4.6		4.1	4.1					62.6	
Level of Service (LOS)	A	A	A		A	A					E	
Approach Delay, s/veh / LOS	4.8	A		4.1	A		0.0			62.6	E	
Intersection Delay, s/veh / LOS	9.7						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.32	A	1.61	B	2.15	B	2.32	B
Bicycle LOS Score / LOS	1.54	B	1.26	A			0.85	A

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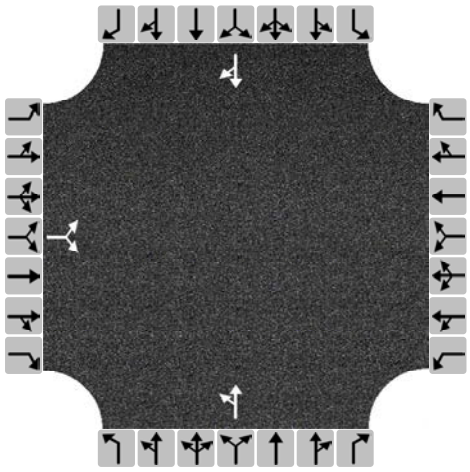
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	4:30-5:15pm
Project Description	
Intersection	S Meadows Ave & Keats St
Jurisdiction	Manhattan Beach, CA
East/West Street	Keats St
North/South Street	S Meadows Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	79		77				20	108			159	88
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	170						139			268		
Percent Heavy Vehicles	2						2			2		
Initial Departure Headway, h_d (s)	3.20						3.20			3.20		
Initial Degree of Utilization, x	0.151						0.124			0.239		
Final Departure Headway, h_d (s)	4.66						4.69			4.31		
Final Degree of Utilization, x	0.220						0.181			0.322		
Move-Up Time, m (s)	2.0						2.0			2.0		
Service Time, t_s (s)	2.66						2.69			2.31		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT			TR		
Flow Rate, v (veh/h)	170						139			268		
Capacity (veh/h)	772						768			835		
95% Queue Length, Q_{95} (veh)	0.8						0.7			1.4		
95% Queue Length, Q_{95} (ft)	20.3						17.8			35.6		
Control Delay (s/veh)	9.0						8.7			9.4		
Level of Service, LOS	A						A			A		
Approach Delay (s/veh) | LOS	9.0	A					8.7	A		9.4	A	
Intersection Delay (s/veh) | LOS	9.1						A					

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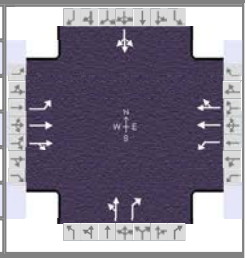
HCS Signalized Intersection Results Summary

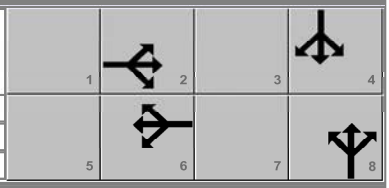
General Information				Intersection Information	
Agency				Duration, h	1.000
Analyst		Analysis Date	6/24/2025	Area Type	Other
Jurisdiction		Time Period		PHF	1.00
Urban Street	Artesia Blvd	Analysis Year	2025	Analysis Period	2> 8:00
Intersection	S Prospect Ave & Artesi…	File Name	S Prospect Ave & Artesia Blvd_Opening Year Wit…		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	34	1048	182	132	803	16	136	39	155	72	98	36

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	90.3	21.7	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		94.3		94.3		25.7		25.7
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						21.1		15.4
Green Extension Time (g_e), s		0.0		0.0		0.6		0.9
Phase Call Probability						1.00		1.00
Max Out Probability						0.37		0.02

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	34	630	600	132	411	408		175	155		206	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	678	1900	1802	460	1900	1887		1113	1610		1700	
Queue Service Time (g_s), s	2.0	14.7	14.8	17.9	8.2	8.2		5.7	10.5		0.0	
Cycle Queue Clearance Time (g_c), s	10.2	14.7	14.8	32.7	8.2	8.2		19.1	10.5		13.4	
Green Ratio (*g/C*)	0.75	0.75	0.75	0.75	0.75	0.75		0.18	0.18		0.18	
Capacity (*c*), veh/h	524	1430	1356	350	1430	1420		254	291		347	
Volume-to-Capacity Ratio (*X*)	0.065	0.441	0.442	0.378	0.287	0.287		0.688	0.533		0.593	
Back of Queue (*Q*), ft/ln (95 th percentile)	13	217	210	89	125	124		226	187		240	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5	8.7	8.4	3.5	5.0	5.0		9.1	7.5		9.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	
Uniform Delay (d_1), s/veh	6.3	5.5	5.5	11.6	4.7	4.7		48.9	44.6		45.7	
Incremental Delay (d_2), s/veh	0.2	1.0	1.1	3.1	0.5	0.5		3.4	0.6		0.7	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Control Delay (*d*), s/veh	6.5	6.5	6.5	14.7	5.2	5.2		52.3	45.2		46.4	
Level of Service (LOS)	A	A	A	B	A	A		D	D		D	
Approach Delay, s/veh / LOS	6.5	A		6.5	A		48.9	D		46.4	D	
Intersection Delay, s/veh / LOS	14.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.85	B	1.62	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.53	B	1.27	A	1.03	A	0.83	A

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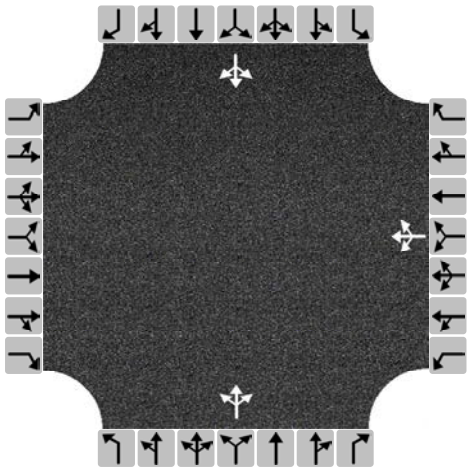
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	7:45-8:30am
Project Description	
Intersection	S Peck Ave & Nelson Ave-Driveway 1(A)
Jurisdiction	Manhattan Beach, CA
East/West Street	Nelson Ave-Driveway 1(A)
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				27	37	37	67	167	21	23	128	64
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				110			277			234		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.098			0.246			0.208		
Final Departure Headway, h_d (s)				4.91			4.48			4.37		
Final Degree of Utilization, x				0.150			0.345			0.284		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.91			2.48			2.37		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				110			277			234		
Capacity (veh/h)				734			803			823		
95% Queue Length, Q_{95} (veh)				0.5			1.6			1.2		
95% Queue Length, Q_{95} (ft)				12.7			40.6			30.5		
Control Delay (s/veh)				8.8			9.8			9.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				8.8		A	9.8		A	9.1		A
Intersection Delay (s/veh) | LOS	9.4						A					

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HCS Two-Way Stop-Control Report

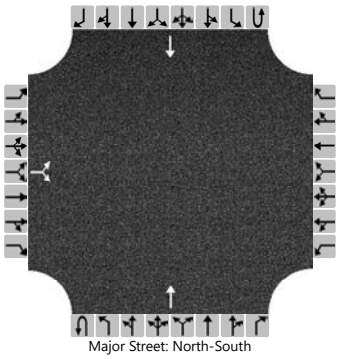
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	7:45-8:30am
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 2(B)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 2(B)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								T				T	
Volume (veh/h)		18		66							238				156	
Percent Heavy Vehicles (%)		0		0												
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2												
Critical Headway (sec)		6.40		6.20												
Base Follow-Up Headway (sec)		3.5		3.3												
Follow-Up Headway (sec)		3.50		3.30												

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			91													
Capacity, c (veh/h)			795													
v/c Ratio			0.11													
95% Queue Length, Q_{95} (veh)			0.4													
95% Queue Length, Q_{95} (ft)			10.0													
Control Delay (s/veh)			10.1													
Level of Service (LOS)			B													
Approach Delay (s/veh)		10.1														
Approach LOS		B														

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HCS Two-Way Stop-Control Report

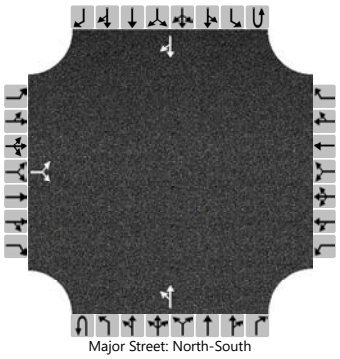
General Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Time Analyzed	7:45-8:30am
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 3(C)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 3(C)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		5		3						89	274				224	24
Percent Heavy Vehicles (%)		0		0						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9							97						
Capacity, c (veh/h)			441							1288						
v/c Ratio			0.02							0.08						
95% Queue Length, Q_{95} (veh)			0.1							0.2						
95% Queue Length, Q_{95} (ft)			2.5							5.1						
Control Delay (s/veh)			13.3							8.0	0.7					
Level of Service (LOS)			B							A	A					
Approach Delay (s/veh)		13.3								2.5						
Approach LOS		B								A						

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HCS Two-Way Stop-Control Report

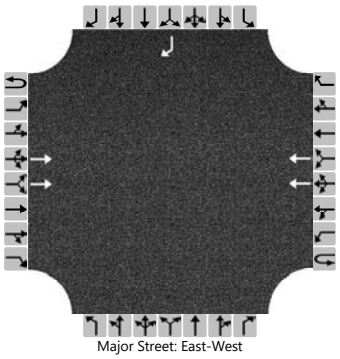
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	8:00-8:45am
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 4(D)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 4(D)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T									R
Volume (veh/h)			881				1408									38
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																41
Capacity, c (veh/h)																344
v/c Ratio																0.12
95% Queue Length, Q_{95} (veh)																0.4
95% Queue Length, Q_{95} (ft)																10.2
Control Delay (s/veh)																16.9
Level of Service (LOS)																C
Approach Delay (s/veh)													16.9			
Approach LOS													C			

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HCS Two-Way Stop-Control Report

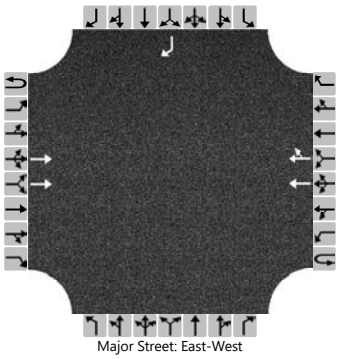
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	8:00-8:45am
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 5(E)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 5(E)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T	TR								R
Volume (veh/h)			877				1384	63								37
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																40
Capacity, c (veh/h)																333
v/c Ratio																0.12
95% Queue Length, Q_{95} (veh)																0.4
95% Queue Length, Q_{95} (ft)																10.2
Control Delay (s/veh)																17.3
Level of Service (LOS)																C
Approach Delay (s/veh)													17.3			
Approach LOS													C			

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HCS Two-Way Stop-Control Report

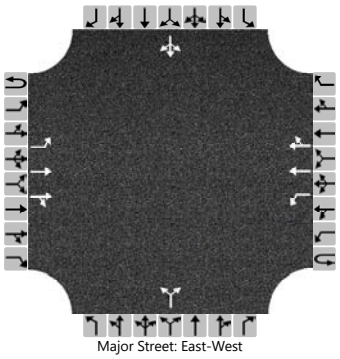
General Information

Analyst	
Agency/Co.	
Date Performed	9/2/2025
Analysis Year	2025
Time Analyzed	8:00-8:45AM
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Stanford Ave amd Artesia Blvd
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Standford Ave/Driveway F
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LR				LTR	
Volume (veh/h)	0	79	834	16	0	26	1391	6		4		29		5	1	76
Percent Heavy Vehicles (%)	3	3			3	3				3		3		0	0	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5		6.9		7.5	6.5	6.9
Critical Headway (sec)		4.16				4.16				7.56		6.96		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5		3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53		3.33		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		86				28					36				89	
Capacity, c (veh/h)		431				729					328				246	
v/c Ratio		0.20				0.04					0.11				0.36	
95% Queue Length, Q_{95} (veh)		0.7				0.1					0.4				1.7	
95% Queue Length, Q_{95} (ft)		17.9				2.6					10.2				42.5	
Control Delay (s/veh)		15.4				10.1					17.3				27.9	
Level of Service (LOS)		C				B					C				D	
Approach Delay (s/veh)	1.3				0.2				17.3				27.9			
Approach LOS	A				A				C				D			

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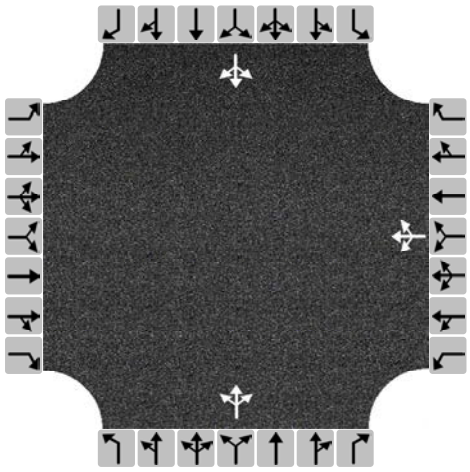
HCS All-Way Stop Control Report

General and Site Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Analysis Time Period (hrs)	1.00
Time Analyzed	5:00-5:45pm
Project Description	
Intersection	S Peck Ave & Nelson Ave-Driveway 1(A)
Jurisdiction	Manhattan Beach, CA
East/West Street	Nelson Ave-Driveway 1(A)
North/South Street	S Peck Ave
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)				16	13	5	22	137	9	8	119	27
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				37			183			167		
Percent Heavy Vehicles				2			2			2		
Initial Departure Headway, h_d (s)				3.20			3.20			3.20		
Initial Degree of Utilization, x				0.033			0.162			0.149		
Final Departure Headway, h_d (s)				4.68			4.18			4.11		
Final Degree of Utilization, x				0.048			0.212			0.191		
Move-Up Time, m (s)				2.0			2.0			2.0		
Service Time, t_s (s)				2.68			2.18			2.11		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				LTR			LTR			LTR		
Flow Rate, v (veh/h)				37			183			167		
Capacity (veh/h)				770			861			876		
95% Queue Length, Q_{95} (veh)				0.2			0.8			0.7		
95% Queue Length, Q_{95} (ft)				5.1			20.3			17.8		
Control Delay (s/veh)				7.9			8.3			8.1		
Level of Service, LOS				A			A			A		
Approach Delay (s/veh) | LOS				7.9		A	8.3		A	8.1		A
Intersection Delay (s/veh) | LOS	8.2						A					

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HCS Two-Way Stop-Control Report

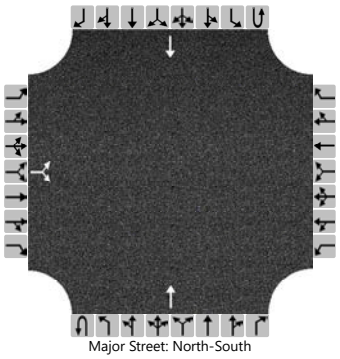
General Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Time Analyzed	4:00-4:45pm
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 2(B)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 2(B)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								T				T	
Volume (veh/h)		10		41							143				163	
Percent Heavy Vehicles (%)		0		0												
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2												
Critical Headway (sec)		6.40		6.20												
Base Follow-Up Headway (sec)		3.5		3.3												
Follow-Up Headway (sec)		3.50		3.30												

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			55													
Capacity, c (veh/h)			822													
v/c Ratio			0.07													
95% Queue Length, Q_{95} (veh)			0.2													
95% Queue Length, Q_{95} (ft)			5.0													
Control Delay (s/veh)			9.7													
Level of Service (LOS)			A													
Approach Delay (s/veh)		9.7														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

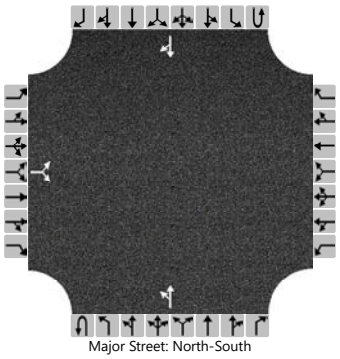
General Information

Analyst	
Agency/Co.	
Date Performed	6/20/2025
Analysis Year	2025
Time Analyzed	4:00-4:45pm
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	S Peck Ave & Driveway 3(C)
Jurisdiction	Manhattan Beach, CA
East/West Street	Driveway 3(C)
North/South Street	S Peck Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		7		8						6	147				203	6
Percent Heavy Vehicles (%)		0		0						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16							7						
Capacity, c (veh/h)			706							1335						
v/c Ratio			0.02							0.00						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
95% Queue Length, Q_{95} (ft)			2.5							0.0						
Control Delay (s/veh)			10.2							7.7	0.0					
Level of Service (LOS)			B							A	A					
Approach Delay (s/veh)		10.2								0.3						
Approach LOS		B								A						

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HCS Two-Way Stop-Control Report

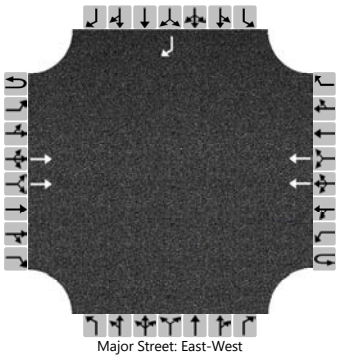
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	4:15-5:00pm
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 4(D)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 4(D)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T									R
Volume (veh/h)			1326				943									11
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																12
Capacity, c (veh/h)																504
v/c Ratio																0.02
95% Queue Length, Q_{95} (veh)																0.1
95% Queue Length, Q_{95} (ft)																2.6
Control Delay (s/veh)																12.3
Level of Service (LOS)																B
Approach Delay (s/veh)													12.3			
Approach LOS													B			

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HCS Two-Way Stop-Control Report

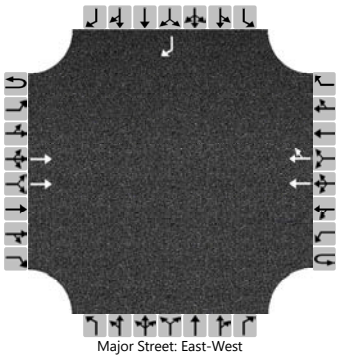
General Information

Analyst	
Agency/Co.	
Date Performed	6/23/2025
Analysis Year	2025
Time Analyzed	4:15-5:00pm
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Artesia Blvd and Driveway 5(E)
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Driveway 5(E)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	0		0	0	1
Configuration			T				T	TR								R
Volume (veh/h)			1320				950	2								7
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.9
Critical Headway (sec)																6.96
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																8
Capacity, c (veh/h)																500
v/c Ratio																0.02
95% Queue Length, Q_{95} (veh)																0.0
95% Queue Length, Q_{95} (ft)																0.0
Control Delay (s/veh)																12.3
Level of Service (LOS)																B
Approach Delay (s/veh)													12.3			
Approach LOS													B			

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HCS Two-Way Stop-Control Report

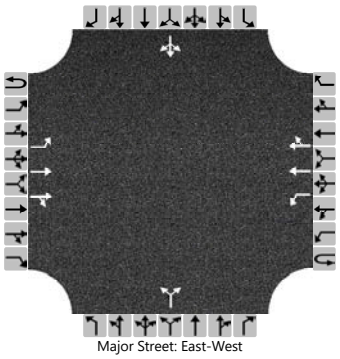
General Information

Analyst	
Agency/Co.	
Date Performed	9/2/2025
Analysis Year	2025
Time Analyzed	4:15-5:00PM
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Stanford Ave and Artesia Blvd
Jurisdiction	Manhattan Beach, CA
East/West Street	Artesia Blvd
North/South Street	Stanford Ave/Driveway F
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LR				LTR	
Volume (veh/h)	0	3	1289	31	0	29	923	3		5		14		3	0	6
Percent Heavy Vehicles (%)	3	3			3	3				3		3		0	0	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5		6.9		7.5	6.5	6.9
Critical Headway (sec)		4.16				4.16				7.56		6.96		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5		3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53		3.33		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3				32					21				10	
Capacity, c (veh/h)		678				464					225				277	
v/c Ratio		0.00				0.07					0.09				0.04	
95% Queue Length, Q_{95} (veh)		0.0				0.2					0.3				0.1	
95% Queue Length, Q_{95} (ft)		0.0				5.1					7.7				2.5	
Control Delay (s/veh)		10.3				13.3					22.6				18.5	
Level of Service (LOS)		B				B					C				C	
Approach Delay (s/veh)	0.0				0.4				22.6				18.5			
Approach LOS	A				A				C				C			

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