February 2026 | Initial Study

# Peterson Elementary School Field Lighting Project

for Huntington Beach City School District

*Prepared for:*

**Huntington Beach City School District**
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PLACEWORKS

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# 1. Introduction

In compliance with the California Environmental Quality Act (CEQA), Huntington Beach City School District (HBCSD) is the applicant[1] and lead agency[2] for the proposed project. As lead agency, HBCSD prepared the environmental documentation for the proposed project to determine if 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 information to use as the basis for determining whether an environmental impact report, negative declaration (ND), or mitigated negative declaration (MND) would provide the necessary environmental documentation and clearance for the proposed project. This initial study has been prepared to support the adoption of an MND.

## 1.1 PROJECT LOCATION

The project site is located at the existing Peterson Elementary School (Peterson ES) campus at 20661 Farnsworth Lane (Assessor's Parcel Number 151-331-12), in the City of Huntington Beach in Orange County. Specifically, the project site consists of 2.81 acres located within the northwest portion of the Peterson ES campus on an existing multi-use playfield (project site).

The City of Huntington Beach is surrounded by the cities of Westminster, Fountain Valley, and Seal Beach to the north, the Pacific Ocean to the west and south, and the cities of Costa Mesa and Newport Beach to the east. See Figure 1, *Regional Location*.

### 1.1.1 Regional and Local Vehicle Access

State Route 39 (SR-39) and State Route 1 (SR-1) are 0.15 mile west and 1.10 miles south of the campus, respectively, and provide regional access to the campus and project site. See Figure 2, *Local Vicinity Map*. The nearest airport to the project site is the John Wayne Airport approximately 6.6 miles east of the project site. Direct train access is not provided to the project site; however, the nearest Amtrak station, which serves the Pacific Surfliner route, and Metrolink station are in Santa Ana, approximately 9.6 miles northeast of the project site.

Locally, the project site is served by a local street grid that surrounds the project site. Direct vehicle and pedestrian access to the project site is provided by Farnsworth Lane, located to the east of the project site along the eastern side of the campus. Farnsworth Lane runs in a north-south direction and is a two-way street that

[1] CEQA Guidelines Section 15351 defines applicant as "a person who proposes to carry out a project which needs a lease, permit, license, certificate, or other entitlement for use or financial assistance from one or more public agencies when that person applies for the governmental approval or assistance."

[2] Public Resources Code Section 21067 defines lead agency as the "public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment."

includes sidewalks on the west and east sides of the street. In addition, the Orange County Transit Authority (OCTA) administers bus service to the campus area. According to the OCTA, the nearest bus stop to the project site is near the corner of Indianapolis Avenue and Beach Boulevard, approximately 725 feet northwest of the project site, which is along SR-39 (see Figure 3, *Aerial Photograph with Photograph Locations*).

## 1.2 ENVIRONMENTAL SETTING

### 1.2.1 Existing Land Use

Peterson ES is an approximately 15.50-acre campus encompassing one District-owned property with Assessor's Parcel Number 151-331-12. The campus currently serves students in transitional kindergarten (TK) through fifth grade. The campus had a 2024 enrollment of 512 students (CDE 2025). The campus consists of 12 academic buildings that are used for administrative and educational purposes. The campus also includes hardcourts; play structures; a solar panel shade structure; multi-use play fields, including soccer fields; an enclosed TK/kindergarten playground with play structures; and a parking lot with two pick-up and drop-off areas. Additionally, the campus includes landscaping, trees, fencing, and concrete walkways.

The project site would be located on two unlit existing soccer fields in the northwest portion of the campus. The unlit soccer fields are bordered by chain-link fencing to the north; a chain-link fence and Talbert Channel to the west; grass playfields, a play structure, and hardscape to the east; and unlit soccer fields to the south. The two soccer fields include soccer goal posts and striped soccer field lines. Two trees are in the northern corner of the project site.

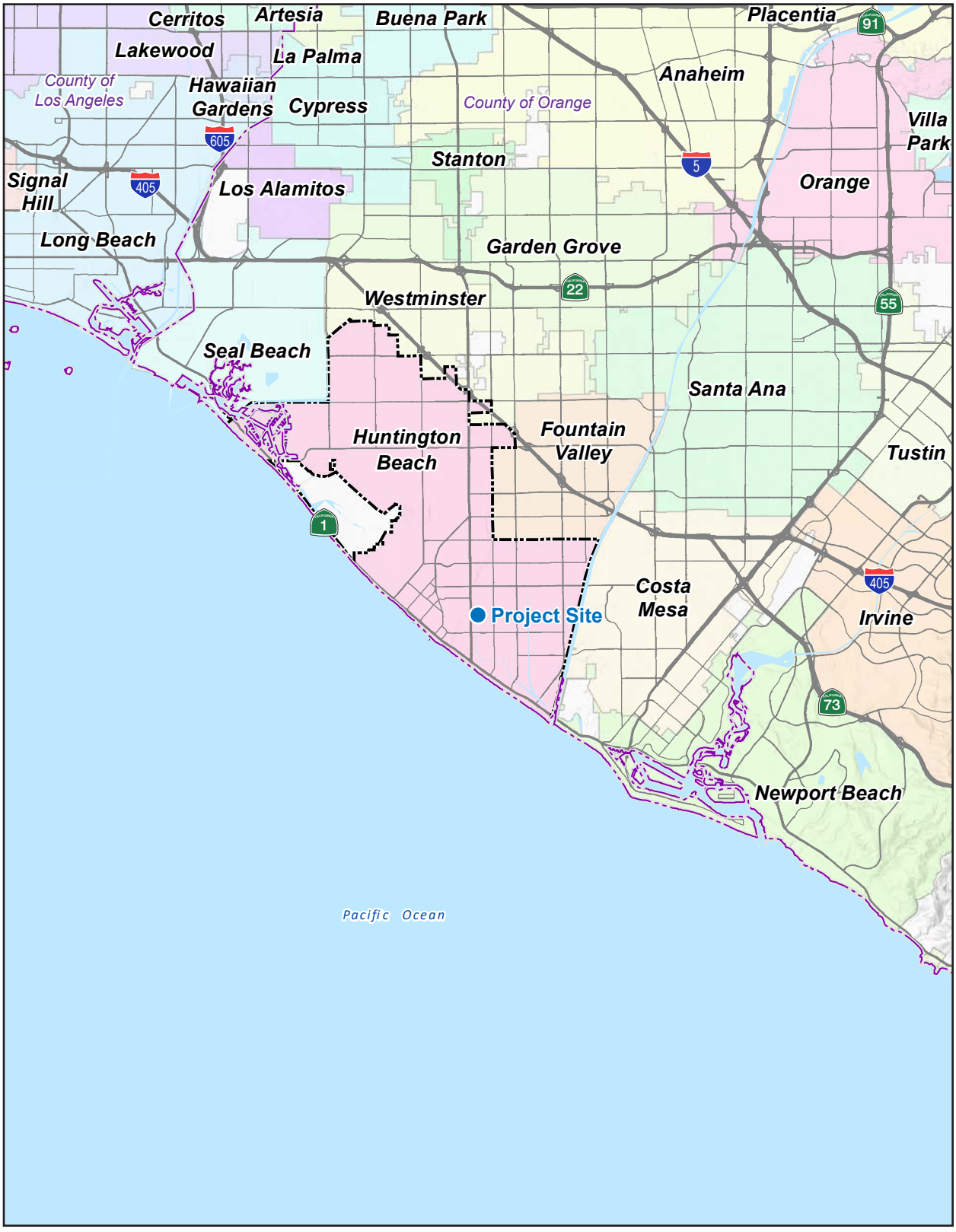
The campus buildings are in the eastern portion of the campus. The campus hardcourts and multi-use play fields with soccer fields are west of the campus buildings. See Figure 3; Figure 4, *Photographs of Project Site*; and Figure 5, *Photographs of Surrounding Uses.*

Currently, no lighting poles are present on the campus.

### 1.2.2 Parking and Access

The project site provides vehicle parking for staff and campus visitors. The campus parking lot along Farnsworth Lane contains 64 spaces, including 6 Americans with Disabilities Act (ADA)-compliant spaces and 2 designated pick-up/drop-off areas. Within this total, a area is situated north of the CLAPP building. Access to the parking lot is provided via one ingress driveway from Farnsworth Lane at the northern end of the lot, one gated egress driveway for buses only, and one egress driveway that connects back to Farnsworth Lane. See Figure 3.

## Figure 1 - Regional Location




City of Huntington Beach Boundary

County Boundary

Note: Unincorporated county areas are shown in white.

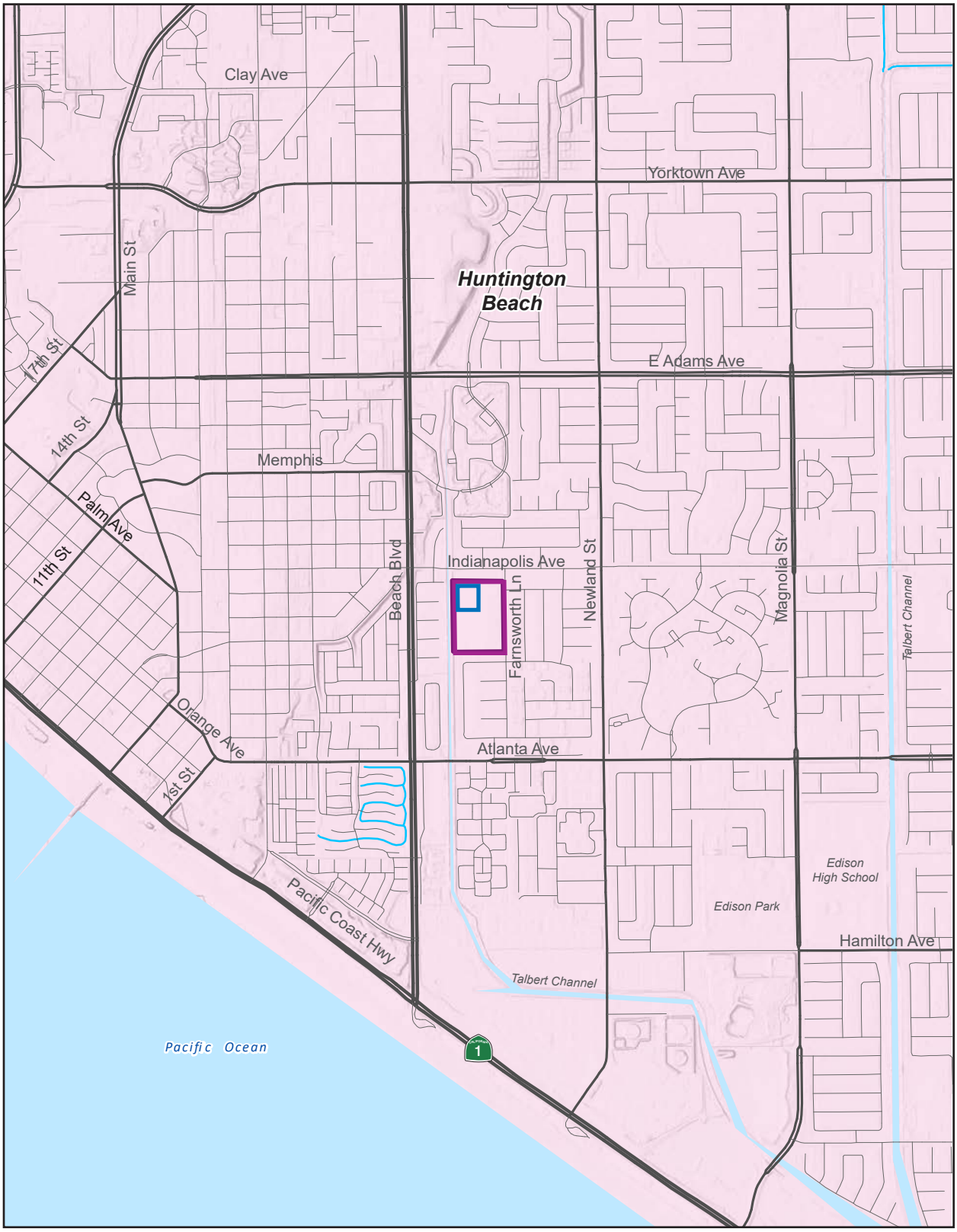
*Source: Generated Using ArcMap, 2025.*

0 3
Scale (Miles)

# 1. Introduction

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## Figure 2 - Local Vicinity Map




*Source: Generated Using ArcMap, 2025.*

# 1. Introduction

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## Figure 3 - Aerial Photograph with Photograph Locations




School Boundary

Project Boundary

Photo Location and Direction (12)

0 240

Scale (Feet)

*Source: Nearmap 2025.*

# 1. Introduction

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# Figure 4 - Photographs of the Project Site



View 1. From the eastern side of the project site looking west toward the project site, Talbert Channel, existing fencing, and alleyway.



View 2. From the northwest corner of the project site looking southeast toward the project site, existing solar canopy, playground, classroom buildings, and northeast corner parking lot.



View 3. From the northern portion of the project site looking south toward the project site, existing solar canopy, playground, and classroom buildings.



View 4. From the western side of the project site looking east toward the project site, existing residences to the north of the project site, classroom buildings, and Parking Lots 1 and 2.



View 5. From the southern side of the project site looking north toward the project site, existing residences to the north of the project site, and alleyway.



View 6. From the northeast corner of the project site looking southwest toward the project site, existing solar canopy, playground, classroom buildings, and Talbert Channel.

*Source: PlaceWorks 2025*

# 1. Introduction

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# Figure 5 - Photographs of Surrounding Land Uses



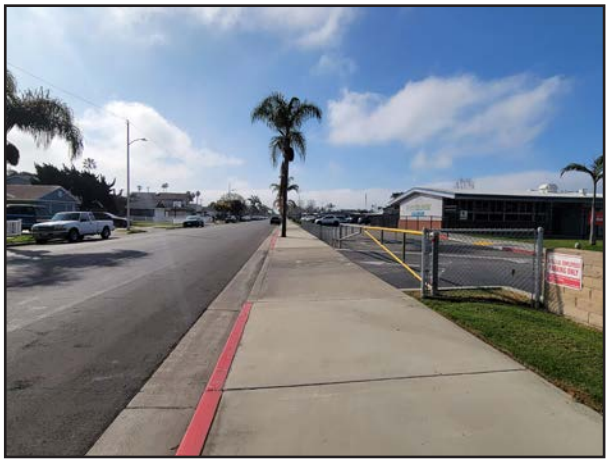
View 7. Looking south toward the Peterson ES Campus to the east of the project site.



View 8. Looking west down the alleyway north of the project site and south of the existing residences.




View 9. Looking southwest down Farnsworth Lane and Indianapolis Avenue.



View 10. Looking south down Farnsworth Lane toward Peterson ES Campus and Campus Parking Lot.



View 11. Looking north down Farnsworth Lane.



View 12. Looking southeast in the direction of the project site from Driftwood Drive.

*Source: PlaceWorks 2025*

# 1. Introduction

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### 1.2.3 Surrounding Land Use

The project site is exclusively surrounded by residential uses, with Talbert Channel to the west of the campus. All surrounding residential uses consist of single-family residences. The residences to the north of the project site, which are the nearest residences to the project site, are approximately 45 feet north from the northern boundary of the project site and do not abut the project site. The residences to the north of the project site are separated by an existing alleyway. The residences to the west of the project site (approximately 104 feet west of the project site) are separated by Talbert Channel, which is concrete lined, and two service access roads east and west of Talbert Channel. Trees line the end of the cul-de-sac on Driftwood Drive west of the project site. Residences to the east are approximately 430 feet from the project site and are separated from the project site by Farnworth Lane. The residences to the south are approximately 600 feet from the project site.

### 1.2.4 Existing General Plan Land Use and Zoning Designations

The campus, including the project site, has a General Plan land use designation of Public/Semipublic (PS) with an underlying designation of Low Density (RL) and a zoning designation of Public/Semipublic (PS). The surrounding General Plan land use designations include RL to the north, east, and west and Low Density (RL) and Medium Density (RM) to the south. The surrounding zoning designations include Residential Low Density (RL) to the north, east, and west and Residential Low Density (RL) and Residential Medium Density (RM) to the south (see Figure 3).

### 1.2.5 Existing Programs and Activities

The existing multi-use playfield is used by Peterson ES students; the Peterson ES Parent Teacher Association (PTA); YMCA program; and American Youth Soccer Organization (AYSO) players, coaches, and spectators. The Peterson ES students utilize the existing multi-use play field during the normal school hours from 8:00 am to 3:06 pm, Monday through Friday. The Peterson ES PTA utilizes the multi-use play field throughout the school year for various events. These events include Fall Festival and Spring Fling, which occur once per year each from approximately 3:00 pm to 7:30 pm, and for after school programs that occur from approximately 3:00 pm to 5:00 pm.

AYSO utilizes the multi-use play field for games and practices during after-school hours on the weekdays, Monday through Friday, and on Saturdays. AYSO games and practices that occur during the weekdays utilize the multi-use play field from approximately 4:00 pm to 8:30 pm during the summer. During the weekdays during the winter months, the field is used for games and practices from 4:00 pm to sunset, Monday through Friday. On Saturdays, games and practices occur from approximately 8:30 am to 5:00 pm, year-round. The on-site YMCA program occurs Monday through Friday starting 3:00 pm until 6:00 pm. Additionally, the multi-use play field can be used for other community activities that are booked through the District, consistent with the Civic Center Act. Historically, community use of the fields has been for YMCA and AYSO for soccer.

# 1.3 PROJECT DESCRIPTION

## 1.3.1 Proposed Land Use

The proposed project would remove two existing unlit soccer fields and install one new lit soccer field with three field lighting poles with field lights (labeled P1, P2, and P3 in Figure 6, *Conceptual Site Plan*) in the northwest portion of the Peterson ES campus. Light pole and field lights P3 would be located in the northern side of the project site facing south; light pole and field lights P2 would be located on the west side of the project site facing east; and light pole and field lights P1 would be located on the east side of the project site facing west. Field lighting poles and field lights P1 and P3 would have six light fixtures, while light pole and field lights P2 would consist of ten light fixtures. All three poles would be approximately 62 feet in height. Each of the field light fixtures would be directed to the soccer field, away from surrounding area. All field lights would be manually turned on and shut off when the field is not in use but would also include an automatic timer that would override the manual control and would shut off the lights by 9:00 pm. In addition to installation of the field lights, associated improvements with the proposed project would include trenching for an electrical utility line that would connect the proposed lights to existing on-site utilities. The new soccer field would include restriping soccer field lines (see Figure 6). No off-site improvements are proposed. Parking would be provided on the campus. The proposed project would not result in an increase in campus capacity or enrollment.

### Proposed Programming and Activities

Similar to the existing uses on the multi-use playfield, the proposed soccer field would continue to be utilized by the Peterson ES students, the Peterson ES PTA, YMCA program, and AYSO players, coaches, and spectators (see Section 1.2.5, *Existing Programming and Activities*).

Installation of the field lighting poles would allow for evening uses during the winter months, similar to uses occurring during the summer months, for various after-school events by the Peterson ES PTA, YMCA program, and AYSO. The Peterson ES PTA and YMCA program events would utilize the proposed field lighting. The Peterson ES PTA Fall Festival event would occur from 3:00 pm to 7:30 pm and the Spring Fling event would occur from 3:00 pm to 7:30 pm. The Peterson ES PTA would continue to use the field for after school programs that occur from approximately 3:00 pm to 5:00 pm. The YMCA program would utilize the field from the end of the school day to 6:00 pm on Mondays through Friday.

Specific to AYSO events, and similar to the current AYSO summer schedule of field use, games and practices would extend into the evening during the winter months from approximately 4:00 pm to 8:30 pm on the weekdays, Monday through Friday. Field lighting would be shut off no later than 9:00 pm. During evening hour uses, spectators would be minimal, and the proposed soccer field and field lights would be predominately used by players and coaches, which would total approximately 60 attendees. Saturday uses for AYSO would utilize the proposed field lighting and would continue to use the proposed soccer field for games and practices with similar attendance during the day between the hours of 8:30 am to 5:00 pm. Similar to existing conditions, the multi-use play field can be used for other community activities that are booked through the District, consistent with the Civic Center Act. Table 1, *Existing Programming and Activities and Proposed Programming and Activities*, compares the existing programming and activities to the proposed programming and activities.

**Table 1 Existing Programming and Activities and Proposed Programming and Activities**

| Organization | Existing Activities | Existing Number of Participants/Spectators | Days of Week | Existing Timing of Activities | Proposed Number of Participants/ Spectators | Days of Week | Proposed Timing of Activities |
|---|---|---|---|---|---|---|---|
| Peterson ES | Normal School Hours | 512 | M – F | 8:00 am – 3:06 pm | 512 | M – F | 8:00 am – 3:06 pm |
| Peterson ES PTA | Fall Festival | 1,500 | Once a year | 3:00 pm – 7:30 pm | 1,500 | Once a year | 3:00 pm – 7:30 pm |
| Peterson ES PTA | Spring Fling | 1,500 | Once a year | 3:00 pm – 7:30 pm | 1,500 | Once a year | 3:00 pm – 7:30 pm |
| Peterson ES PTA | After School Program | Various | As Needed | 3:00 pm – 5:00 pm | Various | As needed | 3:00 pm – 5:00 pm |
| YMCA | After School Program | 50 | M – F | 3:00 pm – 6:00 pm | 50 | M – F | 3:00 pm – 6:00 pm |
| AYSO | Games/ Practices | 60 | M – F | 4:00 pm – 8:30 pm Summer season; 4:00 pm – Sunset Winter season (November to March) | 60 | M – F | 4:00 pm – 8:30 pm Year-round |
| AYSO | Games/ Practices | 60 | Saturdays | 8:30 am – 5:00 pm Year-round | 60 | Saturdays | 8:30 am – 5:00 pm Year-round |

Source: Huntington Beach City School District.

Additionally, the proposed project would not include, and would not authorize, additional fields, additional lighting poles, increased light levels, or extension of operating hours beyond those described in this section.

### 1.3.2 Project Construction

The construction of the proposed project would occur in one phase and would take approximately three months in the Summer of 2026. Construction activities would include site preparation, grading, construction, and utility trenching.

## 1.4 DISCRETIONARY APPROVALS

The District is the lead agency under CEQA and is carrying out the proposed project. The District Board of Trustees (Board) must approve the proposed project and adopt the IS/MND and Mitigation Monitoring and Reporting Program (MMRP). The Board will consider the information in the IS/MND when making its decision to approve or deny the proposed project, or in directing modifications to the proposed project in response to the IS/MND's findings and mitigation measures. The IS/MND is intended to disclose to the public the proposed project's details, analyses of the proposed project's potential environment impacts, and identification of feasible mitigation that would lessen or reduce significant impacts to less-than-significant levels.

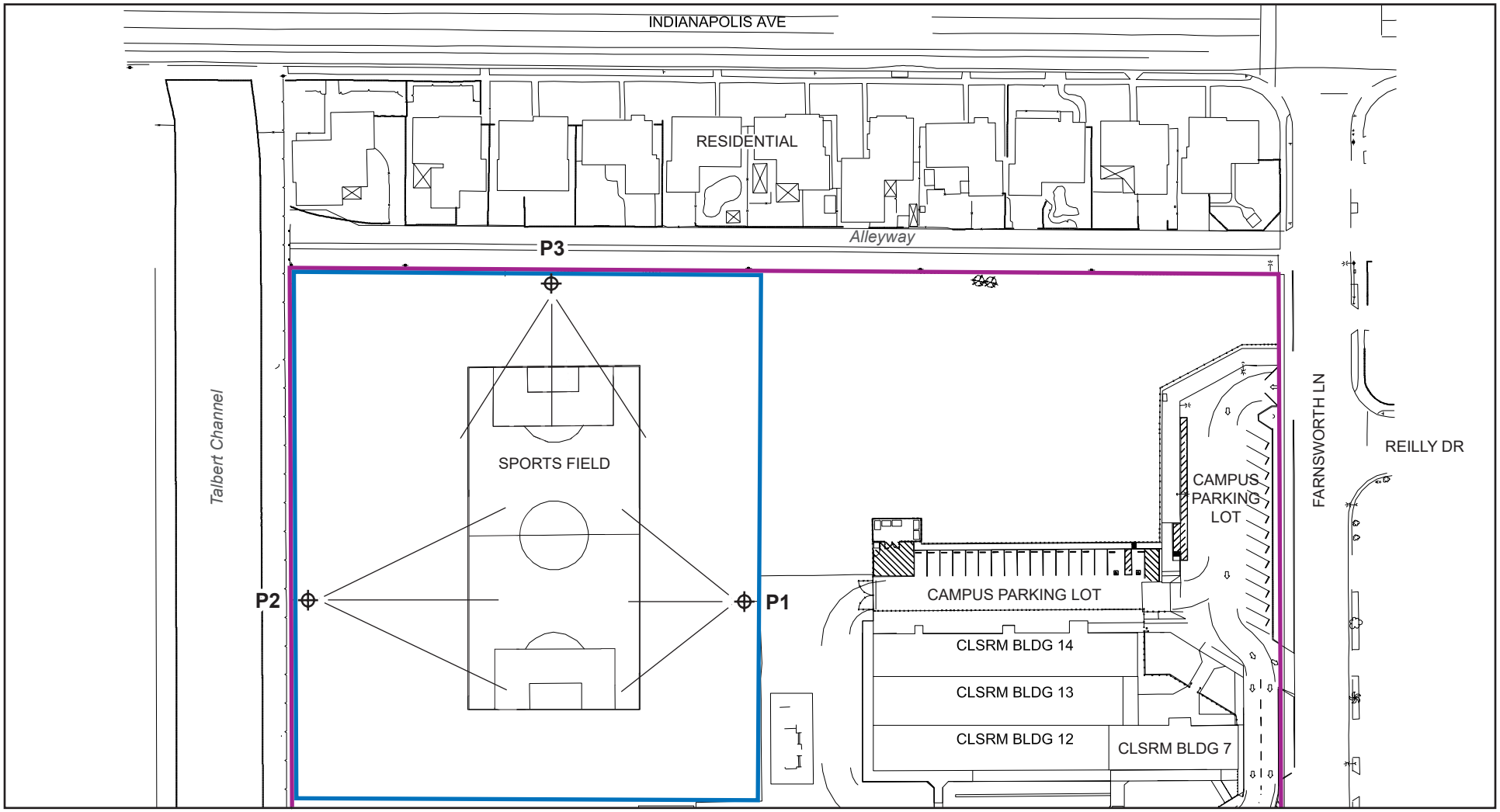
# 1. Introduction

The District is the lead agency under CEQA and has approval authority over the proposed project. The proposed project would require approval and/or coordination from the Division of State Architects. See Table 2, *Discretionary Approvals*.

**Table 2 Discretionary Approvals**

| Lead Agency | Action |
|---|---|
| Huntington Beach City School District | • Adopt the Initial Study/Mitigated Negative Declaration<br>• Adopt the Mitigation Monitoring and Reporting Program<br>• Approve the proposed project |
| **Responsible Agencies** | **Action** |
| Department of General Services, Division of State Architect | • Approval of construction drawings |

## Figure 6 - Conceptual Site Plan




*Source: Studio+ 2025.*

# 1. Introduction

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# 2. Environmental Checklist

## 2.1 PROJECT INFORMATION

1. **Project Title:** Peterson Elementary School Field Lighting Project

2. **Lead Agency Name and Address:**
   Huntington Beach City School District
   8750 Dorsett Drive
   Huntington Beach, CA 92646

3. **Contact Person and Phone Number:**
   Mark Manstof, Executive Director, Operations
   949-445-0075

4. **Project Location:** The project site is located at the existing Peterson Elementary School (Peterson ES) campus at 20661 Farnsworth Lane (Assessor's Parcel Number 151-331-12), in the City of Huntington Beach in Orange County, within 2.81 acres in the northwest portion of the Peterson ES campus on an existing multi-use playfield.

5. **Project Sponsor's Name and Address:**
   Huntington Beach City School District
   8750 Dorsett Drive
   Huntington Beach, CA 92646

6. **General Plan Designation:** Public/Semipublic (PS) with an underlying designation of Low Density (RL).

7. **Zoning:** Public/Semipublic (PS)

8. **Description of Project:**
   The proposed project would replace two unlit soccer fields with one new lit soccer field in the northwest portion of the Peterson Elementary School campus, including three approximately 62-foot-tall lighting poles with fixtures directed toward the field and automatically shut off by timers. Improvements would include electrical trenching, restriping of field lines, and use of existing on-campus parking, with no off-site improvements or increase in campus capacity or enrollment. The field would continue to serve students and community users such as the Peterson ES PTA, YMCA, and AYSO, with lighting enabling limited evening use for after-school programs, events, and winter games/practices, and lights turned off by 9:00 pm. Construction would occur in a single phase over approximately three months in the summer and would involve site preparation, light installation, field construction, and utility trenching.

# 2. Environmental Checklist

**9. Surrounding Land Uses and Setting:**

The project site is exclusively surrounded by residential uses, with Talbert Channel to the west of the campus. All surrounding residential uses consist of single-family residences. The residences to the north of the project site, which are the nearest residences to the project site, are approximately 45 feet north from the northern boundary of the project site and do not abut the project site. The residences to the north of the project site are separated by an existing alleyway. The residences to the west of the project site (approximately 104 feet west of the project site) are separated by Talbert Channel, which is concrete lined, and two service access roads east and west of Talbert Channel. Trees line the end of the cul-de-sac on Driftwood Drive west of the project site. Residences to the east are approximately 430 feet from the project site and are separated from the project site by Farnworth Lane. The residences to the south are approximately 600 feet from the project site.

**10. Other Public Agencies Whose Approval Is Required (e.g., permits, financing approval, or participating agreement):**

Department of General Services, Division of State Architect: Approval of construction drawings

**11. 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.?**

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.94 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

On April 29, 2025, a Sacred Lands File request was submitted to the Native American Heritage Commission (NAHC). On May 7, 2025, the District received a negative result stating that there are no known sacred sites or tribal cultural resources within or in the vicinity of the project site. Additionally, no Native American Tribes requested to be on the District's tribal consultation list for projects in the District's jurisdiction. Therefore, no Native American Tribes were contacted for the proposed project.

## 2.2 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 on the following pages.

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

## 2.3 DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

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* — *Date* 2/16/26

## 2.4 EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) **Earlier Analyses Used.** Identify and state where they are available for review.

   b) I**mpacts Adequately Addressed.** Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) **Mitigation Measures.** For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **I. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:** | | | | |
| a) Have a substantial adverse effect on a scenic vista? | | | X | |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | | | | X |
| 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? | | | | X |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | | | X | |
| **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:** | | | | |
| 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? | | | | X |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | | | | X |
| 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))? | | | | X |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | | | | X |

# 2. Environmental Checklist

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 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? | | | | X |
| **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:** | | | | |
| a) Conflict with or obstruct implementation of the applicable air quality plan? | | | X | |
| 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? | | | X | |
| c) Expose sensitive receptors to substantial pollutant concentrations? | | | X | |
| d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? | | | X | |
| **IV. BIOLOGICAL RESOURCES. Would the project:** | | | | |
| 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? | | | | X |
| 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? | | | X | |
| 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? | | | X | |
| 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? | | X | | |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | | | X | |
| 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? | | | | X |
| **V. CULTURAL RESOURCES. Would the project:** | | | | |
| a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? | | | | X |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? | | X | | |
| c) Disturb any human remains, including those interred outside of dedicated cemeteries? | | | X | |

# 2. Environmental Checklist

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **VI. ENERGY. Would the project:** | | | | |
| a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? | | | X | |
| b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? | | | X | |
| **VII. GEOLOGY AND SOILS. Would the project:** | | | | |
| 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. | | | | X |
| ii) Strong seismic ground shaking? | | | X | |
| iii) Seismic-related ground failure, including liquefaction? | | | X | |
| iv) Landslides? | | | | X |
| b) Result in substantial soil erosion or the loss of topsoil? | | | X | |
| 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? | | | X | |
| 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? | | | X | |
| 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? | | | | X |
| f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | | X | | |
| **VIII. GREENHOUSE GAS EMISSIONS. Would the project:** | | | | |
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | | | X | |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | | | X | |
| **IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:** | | | | |
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | | | X | |
| 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? | | | X | |

# 2. Environmental Checklist

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | | | X | |
| 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? | | | X | |
| 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? | | | | X |
| f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | | | X | |
| g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? | | | X | |
| **X. HYDROLOGY AND WATER QUALITY. Would the project:** | | | | |
| a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? | | | X | |
| b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? | | | X | |
| 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; | | | X | |
| ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; | | | X | |
| 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 | | | X | |
| iv) impede or redirect flood flows? | | | X | |
| d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? | | | X | |
| e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? | | | X | |
| **XI. LAND USE AND PLANNING. Would the project:** | | | | |
| a) Physically divide an established community? | | | | X |
| 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? | | | | X |

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **XII. MINERAL RESOURCES. Would the project:** | | | | |
| 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? | | | | X |
| 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? | | | X | |
| **XIII. NOISE. Would the project result in:** | | | | |
| 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? | | | X | |
| b) Generation of excessive groundborne vibration or groundborne noise levels? | | | X | |
| 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? | | | | X |
| **XIV. POPULATION AND HOUSING. Would the project:** | | | | |
| 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)? | | | | X |
| b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? | | | | X |
| **XV. PUBLIC SERVICES. Would the project:** | | | | |
| 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? | | | X | |
| Police protection? | | | X | |
| Schools? | | | | X |
| Parks? | | | X | |
| Other public facilities? | | | X | |
| **XVI. RECREATION.** | | | | |
| a) Would the 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? | | | X | |

# 2. Environmental Checklist

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 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? | | | X | |
| **XVII. TRANSPORTATION. Would the project:** | | | | |
| a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? | | | X | |
| b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)? | | | X | |
| c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | | | | X |
| d) Result in inadequate emergency access? | | | | X |
| **XVIII. TRIBAL CULTURAL RESOURCES.** | | | | |
| a) Would the 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 | | X | | |
| 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. | | X | | |
| **XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:** | | | | |
| 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? | | | X | |
| b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? | | | X | |
| 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? | | | X | |
| 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? | | | X | |

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? | | | X | |
| **XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:** | | | | |
| a) Substantially impair an adopted emergency response plan or emergency evacuation plan? | | | X | |
| 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? | | | X | |
| 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? | | | X | |
| 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? | | | X | |
| **XXI. MANDATORY FINDINGS OF SIGNIFICANCE.** | | | | |
| 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? | | X | | |
| 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.) | | | X | |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | | | X | |

# 2. Environmental Checklist

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# 3. Environmental Analysis

Section 2.4 provided a checklist of environmental impacts. This section provides an evaluation of the impact categories and questions contained in the checklist and identifies mitigation measures, if applicable.

## 3.1 AESTHETICS

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

**a) Have a substantial adverse effect on a scenic vista?**

**Less Than Significant Impact.** The City of Huntington Beach is highly developed and urbanized and scenic vistas are limited throughout the City and the City's General Plan does include any designated scenic vistas. According to the Circulation Element of the City's General Plan, the City has identified certain corridors and routes throughout the City as Scenic Corridors. Scenic Corridors are defined as lands generally adjacent to and visible from the highway, using a motorist's line of vision and consist of roads that offer motorists, cyclists, and pedestrians attractive vistas and pleasing street scenes. The Circulation Element further defines Scenic Corridors as Major Urban Scenic Corridors, Minor Urban Scenic Corridors, or Landscape Corridors. Figure CIRC-7, Scenic Highway Plan of the Circulation Element, shows the locations of each of the Scenic Corridors (Huntington Beach 2017c). The nearest Scenic Corridor to the project site is a Landscape Corridor on Beach Boulevard, approximately 0.14 mile west. Additionally, Landscape Corridors are defined as corridors requiring specific treatment of signage, landscaping, or other details to reinforce the design continuity of the area (Huntington Beach 2017c).

The proposed project would be limited to the project site, which is located in the northwestern portion of the Peterson ES campus. The proposed project would not adversely affect the requirements of the Landscape Corridor in Beach Boulevard or any other Scenic Corridors because the proposed project would not be visible. Specifically, the proposed project would not impact any existing signage, landscaping, or other details reinforcing design continuity of the area. Therefore, the proposed project would not have a substantial adverse effect on a scenic vista, and impacts would be less than significant.

**b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

**No Impact.** The nearest officially designated state scenic highway is a section of State Route 2 (SR-2) near La Canada Flintridge, approximately 40.7 miles north of the project site (Caltrans 2025). The nearest eligible state scenic highway to the project site is SR-1 approximately 1.12 miles south of the project site. Due to the distance, topography, and intervening development, the project site is not visible from SR-2 or SR-1. Therefore, the proposed project would not damage scenic resources within a state scenic highway, and no impact would occur.

# 3. Environmental Analysis

**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?**

**No Impact.** As defined by Public Resources Code Section 21071, for an incorporated city, an "urbanized area" is a city that either by itself or in combination with two contiguous incorporated cities has a population of at least 100,000 persons. The City of Huntington Beach has an estimated population of 196,010 people (Data USA 2025). Therefore, the project site is in an urbanized area.

The project site is zoned Public/Semipublic, with a land use of Public/Semipublic with an underlying designation of Low Density. The permitted uses include schools, public or private defined as educational institutions having a curriculum comparable to that required in the public schools of the State of California. The proposed project would not alter the site's land use and zoning and would not conflict with any applicable land use plans, policies, or regulations. As discussed in Section 3.1(a), the proposed project would not degrade or damage scenic vistas and resources. Additionally, there are no specific building standards that govern scenic quality in the Public/Semipublic zone. Therefore, the proposed project would not conflict with applicable zoning or regulations governing scenic quality, and no impact would occur.

**d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?**

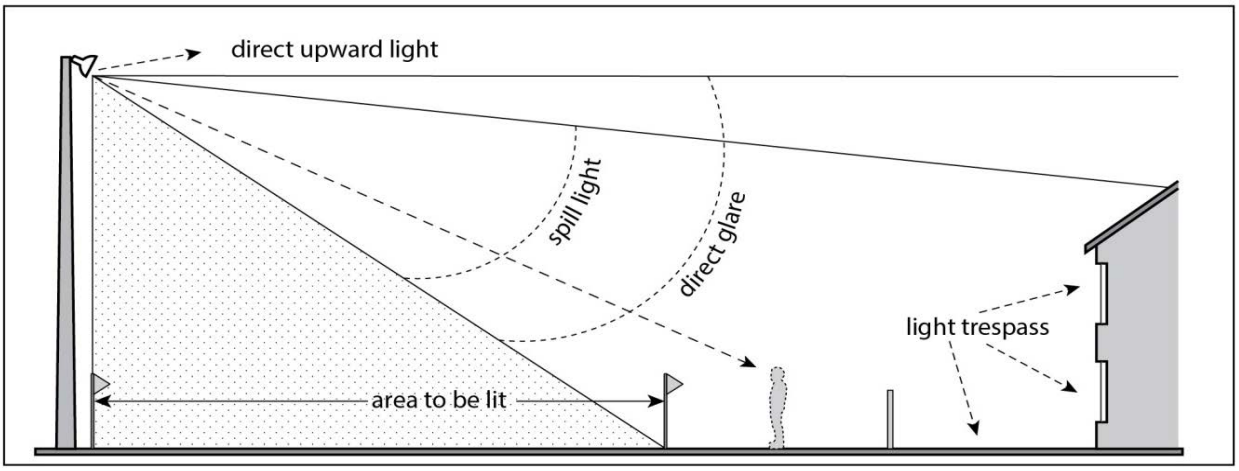
**Less Than Significant Impact.** There are no existing sources of lighting on the project site. The existing sources of lighting in the surrounding area include outdoor lighting on the Peterson ES campus, street lights, security lighting, light from outdoor residential lights, indoor lights emanating from windows, lights in parking lots, and vehicle headlights traveling on public rights-of-way and in parking lots.

Glare can occur when a light source reflects off a reflective/light-colored surface. Existing sources of glare on-site include light reflecting off vehicles traveling on the public rights-of-way, vehicles parked in parking lots and along public rights-of-way, and light-colored building materials in the surrounding area.

**Glare** means lighting entering the eye directly from a light fixture or indirectly from reflective surfaces that causes visual discomfort or reduced visibility. Glare can be generated by building-exterior materials, surface-paving materials, vehicles traveling or parked on roads and driveways, and sports lights. Any highly reflective façade material is a concern because buildings can reflect bright sunrays. The concepts of spill light, direct glare, and light trespass are illustrated in Exhibit A, *Spill Light, Direct Glare, and Light Trespass*, adapted from the Institution of Lighting Engineers (ILE 2003).

**Direct glare** is caused by looking at an unshielded lamp or a light at maximum candlepower. Direct glare is dependent on the brightness of the light source, the contrast in brightness between the light source and the surrounding environment, the size of the light source, and its position.

## Exhibit A: Spill Light, Direct Glare, and Light Trespass




**Illuminance** is the amount of light on a surface or plane, typically expressed in a horizontal plane (e.g., on the ground) or in a vertical plane (e.g., on the side of a building).

**Lumen** means the unit of measure used to quantify the amount of visible light produced by a light source or emitted from a luminaire (as distinct from "watt," a measure of power consumption).

**Luminaire** means outdoor electrically powered illuminating devices that include a light source, outdoor reflective or refractive surfaces, lenses, electrical connectors and components, and all parts used to mount the assembly, distribute the light, and/or protect the light source, whether permanently installed or portable. An important component of luminaires is their shielding.

- **Fully shielded**. A luminaire emitting no light above the horizontal plane.
- **Shielded**. A luminaire emitting less than 2 percent of its light above the horizontal plane.
- **Partly shielded**. A luminaire emitting less than 10 percent of its light above the horizontal plane.
- **Unshielded**. A luminaire that may emit light in any direction.

**Light trespass.** Spill light that, because of quantitative, directional, or type of light, causes annoyance, discomfort, or loss in visual performance and visibility. Light trespass is light cast where it is not wanted or needed, such as light from a streetlight or a floodlight that illuminates someone's bedroom at night, making it difficult to sleep. As a general rule, taller poles allow fixtures to be aimed more directly on the surface target, which reduces the amount of light spilling into surrounding areas. Proper fixture angles ensure even light distribution and reduce spill light, as shown in Exhibit A, *Spill Light, Direct Glare, and Light Trespass.*

**Sky Glow** is light that reflects into the night sky and reduces visibility of the sky and stars. It is a concern in many jurisdictions, especially those with observatories.

**Spill light** is caused by misdirected light that illuminates areas outside the area intended to be lit. Spill light can contribute to light pollution.

# 3. Environmental Analysis

## Municipal Code and General Plan

The City of Huntington Beach does not establish a significant threshold for light spill for outdoor lighting near residential areas or for recreational areas. The Huntington Beach Municipal Code does not identify minimum light thresholds for buildings or for recreational uses. Additionally, a "Night Sky Ordinance" is a common policy set by local municipalities that regulates outdoor lighting to reduce light pollution and other adverse effects. A Night Sky Ordinance was also not found within the City's General Plan, Municipal Code, and website.

## Industry Standards for Lighting Thresholds

The Illuminating Engineering Society (IES) and the International Dark-Sky Association (IDA)'s Model Lighting Ordinance (MLO) provides guidance for communities to develop effective lighting control ordinances (IDA 2011). The MLO provides the following light spill thresholds:

- Rural/Low Density = 0.1 foot-candle
- Mixed-use/Suburban Density = 0.3 foot-candle
- City/Urban = 0.8 foot-candle

As previously established, the City of Huntington Beach's Municipal Code does not include a light spill threshold for outdoor lighting near residential areas or for recreational areas, and the City's General Plan, Municipal Code, or website does not include a Night Sky Ordinance. Because the project site is in the City of Huntington Beach, which is an urbanized area as defined in Impact 3.1(c), 0.8 foot-candle (fc) would be the appropriate light spill threshold for the proposed project. Additionally, the 0.8 fc threshold would be applied to both vertical and horizontal light spill measurements for the proposed project. Vertical and horizontal light measurements for the proposed project can be seen in Figure 7, *Conceptual Site Plan and Vertical Light Measurements at Residential Property Lines* and Figure 8, *Conceptual Site Plan and Horizontal Light Measurements at Campus Boundaries*.

## Existing Conditions

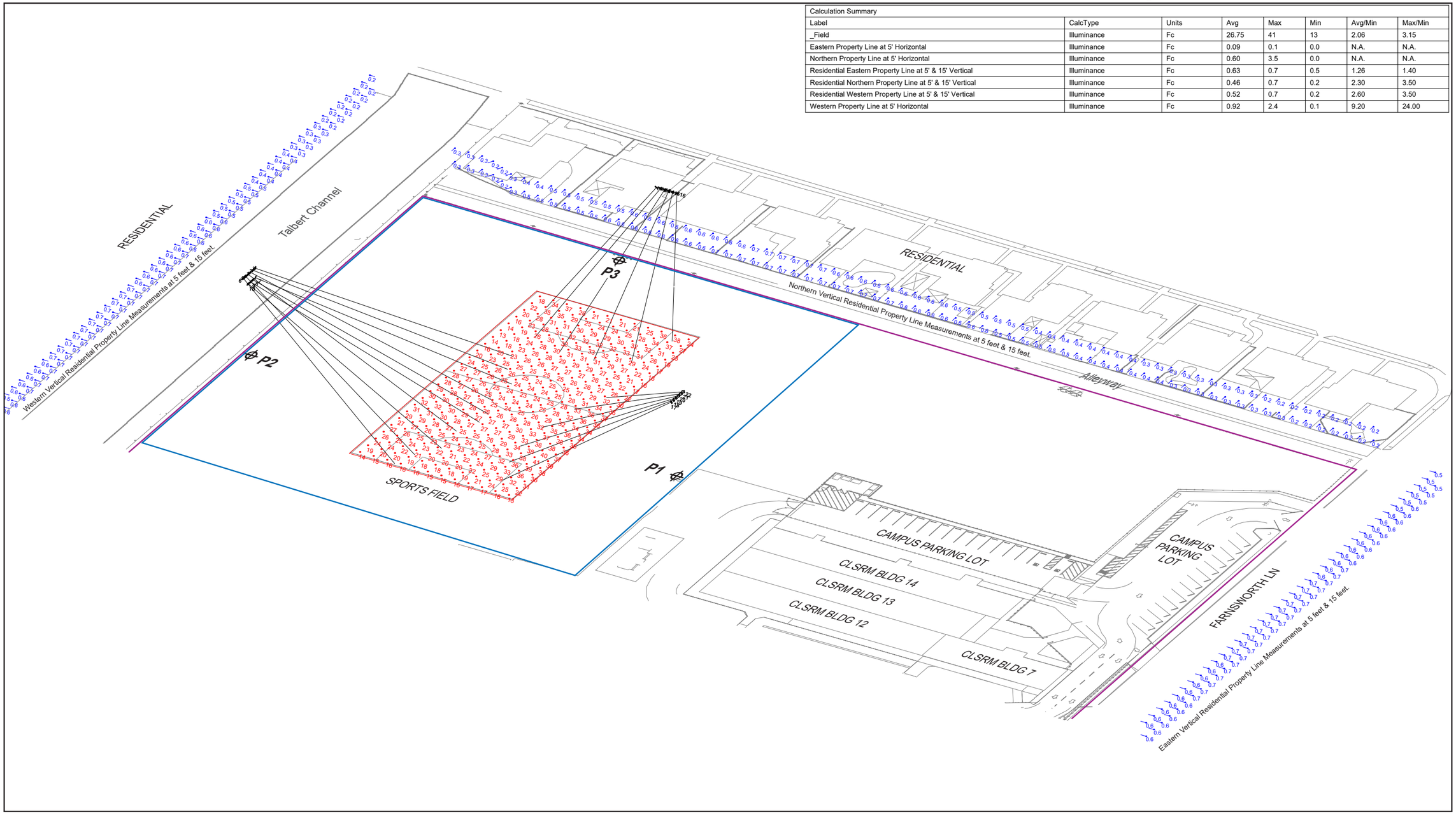
Existing on-site sources of artificial light include light emanating from building interiors, building and security lights, and parking lots. Existing off-site lighting sources include street lighting, vehicular lighting, and exterior lighting on existing residential uses. For potential lighting impacts, the nearest off-site sensitive receptors to the project site are the single-family residences along Indianapolis Avenue directly north of the project site and the single-family residences on 7 Seas Lane, Driftwood Drive, and Ebbtide Circle west of the project site (see Figure 3).

## Proposed Lighting

The proposed project would install three field lighting poles with field lights in the northwest portion of the Peterson ES campus. The nearest lighting pole to the northern residential property line would be lighting pole P3, approximately 68 feet south of the northern residential property line. The nearest lighting pole to the western residential property line would be lighting pole P2, approximately 138 feet east of the western residential property boundary. The nearest lighting pole to the eastern residential property line would be lighting pole P1, approximately 418 feet west of the eastern residential property line; see Figure 6.

# Figure 7 - Conceptual Site Plan and Vertical Light Measurements at Campus Boundaries

| Calculation Summary | | | | | | | |
|---|---|---|---|---|---|---|---|
| Label | CalcType | Units | Avg | Max | Min | Avg/Min | Max/Min |
| _Field | Illuminance | Fc | 26.75 | 41 | 13 | 2.06 | 3.15 |
| Eastern Property Line at 5' Horizontal | Illuminance | Fc | 0.09 | 0.1 | 0.0 | N.A. | N.A. |
| Northern Property Line at 5' Horizontal | Illuminance | Fc | 0.60 | 3.5 | 0.0 | N.A. | N.A. |
| Residential Eastern Property Line at 5' & 15' Vertical | Illuminance | Fc | 0.63 | 0.7 | 0.5 | 1.26 | 1.40 |
| Residential Northern Property Line at 5' & 15' Vertical | Illuminance | Fc | 0.46 | 0.7 | 0.2 | 2.30 | 3.50 |
| Residential Western Property Line at 5' & 15' Vertical | Illuminance | Fc | 0.52 | 0.7 | 0.2 | 2.60 | 3.50 |
| Western Property Line at 5' Horizontal | Illuminance | Fc | 0.92 | 2.4 | 0.1 | 9.20 | 24.00 |




School Boundary
Project Boundary
Light Pole Location (3)

0 65
Scale (Feet)

*Source: Studio+ January 21, 2026.*

# 3. Environmental Analysis

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# Figure 8 - Conceptual Site Plan and Horizontal Light Measurements at Campus Boundaries

| Calculation Summary | | | | | | | |
|---|---|---|---|---|---|---|---|
| Label | CalcType | Units | Avg | Max | Min | Avg/Min | Max/Min |
| _Field | Illuminance | Fc | 26.75 | 41 | 13 | 2.06 | 3.15 |
| Eastern Property Line at 5' Horizontal | Illuminance | Fc | 0.09 | 0.1 | 0.0 | N.A. | N.A. |
| Northern Property Line at 5' Horizontal | Illuminance | Fc | 0.60 | 3.5 | 0.0 | N.A. | N.A. |
| Residential Eastern Property Line at 5' & 15' Vertical | Illuminance | Fc | 0.63 | 0.7 | 0.5 | 1.26 | 1.40 |
| Residential Northern Property Line at 5' & 15' Vertical | Illuminance | Fc | 0.46 | 0.7 | 0.2 | 2.30 | 3.50 |
| Residential Western Property Line at 5' & 15' Vertical | Illuminance | Fc | 0.52 | 0.7 | 0.2 | 2.60 | 3.50 |
| Western Property Line at 5' Horizontal | Illuminance | Fc | 0.92 | 2.4 | 0.1 | 9.20 | 24.00 |

RESIDENTIAL

Alleyway

Northern Campus Boundary Horizontal Measurements at 5 feet.

RESIDENTIAL

Talbert Channel

Western Campus Boundary Horizontal Measurements at 5 feet.

P1

P2

P3

SPORTS FIELD

CAMPUS PARKING LOT

CAMPUS PARKING LOT

CLSRM BLDG 14

CLSRM BLDG 13

CLSRM BLDG 12

CLSRM BLDG 7

FARNSWORTH LN

Eastern Campus Boundary Horizontal Measurements at 5 feet.

School Boundary

Project Boundary

Light Pole Location (3)

0 60

Scale (Feet)

*Source: MUSCO 2025.*

# 3. Environmental Analysis

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Additionally, on March 23, 2025, and March 29, 2025, existing conditions of the project site were documented, as shown on Figure 9, *Visual Simulation Locations*. Location 1 is near the intersection of Reilly Drive and Farnsworth Lane facing west toward the project site. See Figure 10, *Location 1: Existing and Proposed Daytime Views* and Figure 11, *Location 1: Existing and Proposed Nighttime Views*. Location 2 is at the intersection of Indianapolis Avenue and Yvonne Lane facing south toward the project site. See Figure 12, *Location 2: Existing and Proposed Daytime Views*, and Figure 13, *Location 2: Existing and Proposed Nighttime Views*. Location 3 is at the intersection of Driftwood Drive and 7 Seas Lane facing east toward the project site. See Figure 14, *Location 3: Existing and Proposed Daytime Views*, and Figure 15, *Location 3: Existing and Proposed Nighttime Views*.

## Light Spill and Glare

For the proposed project, vertical light levels from the proposed field lighting were evaluated in fc at 5 and 15 feet above grade at residential building facades located north, west, and east of the project site; see Figure 7. In addition, horizontal light levels were evaluated at 5 feet above grade along the northern, western, and eastern campus boundaries; see Figure 8. The maximum projected vertical light levels at residential facades would be 0.7 fc at both 5 and 15 feet above grade. The maximum projected horizontal light levels at the campus boundaries would be 3.5 fc along the northern boundary, 2.4 fc along the western boundary, and 0.1 fc along the eastern boundary. Additionally, the horizontal light measurements are on the existing soccer field within the boundaries of the campus.

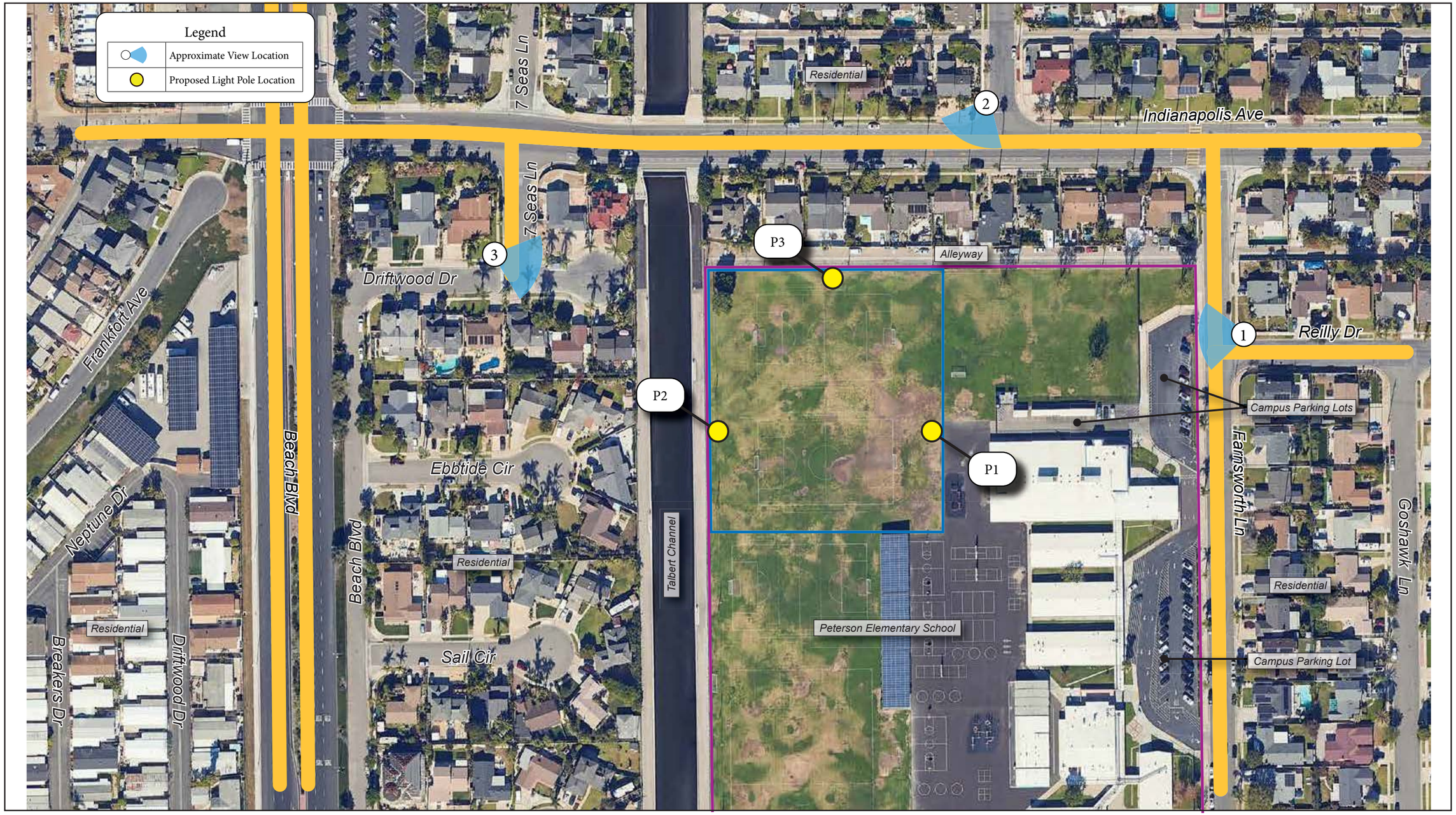
The nearest off-site sensitive receptors are single-family residences along Indianapolis Avenue north of the project site and along 7 Seas Lane, Driftwood Drive, and Ebbtide Circle west of the project site. At these locations, projected vertical light levels of 0.7 fc at 5 and 15 feet above grade would remain below the applicable 0.8 fc threshold.

To further minimize light spill, the proposed field lights would be designed with steep aiming angles, appropriate illumination levels, and automatic timers to ensure lights are turned off by 9:00 p.m. Existing street lighting is present in the surrounding area, and the proposed lighting would be consistent with existing daytime and nighttime lighting conditions. Light levels would also continue to decrease with increasing distance from the light sources. Accordingly, the proposed project would not introduce substantial light or glare that would adversely affect daytime or nighttime views, and impacts would be less than significant.

# 3. Environmental Analysis

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## Figure 9 - Visual Simulation Locations




School Boundary

Project Site

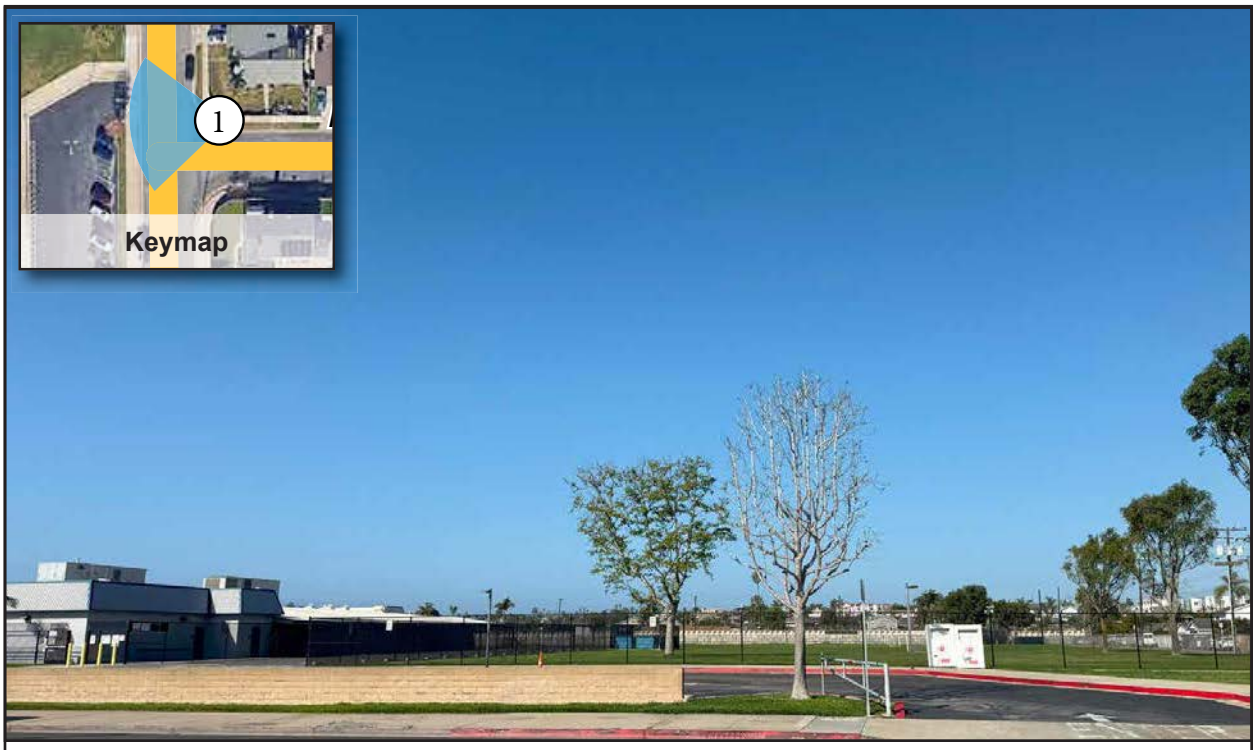
0 140
Scale (Feet)

*Source: PlaceWorks 2025.*

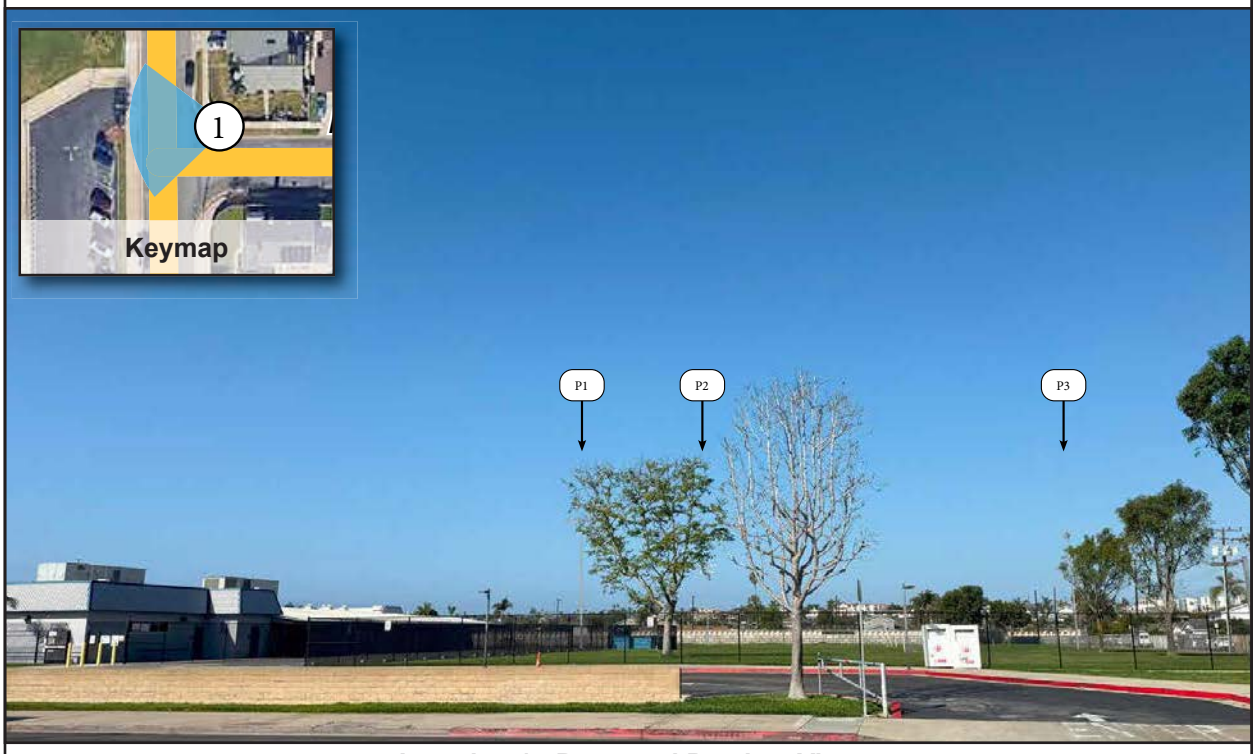
# 3. Environmental Analysis

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## Figure 10 - Location 1 – Existing and Proposed Daytime Views




Location 1 - Existing Daytime View



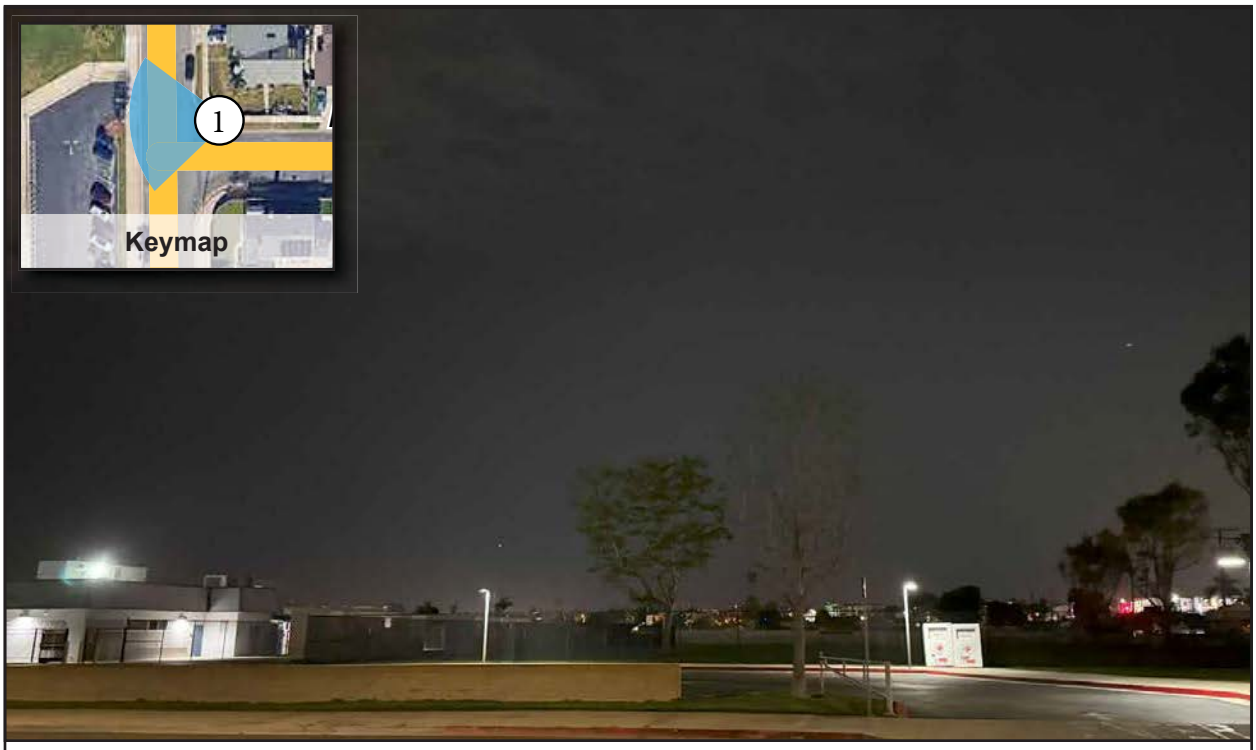

Location 1 - Proposed Daytime View

*Source: PlaceWorks 2025.*

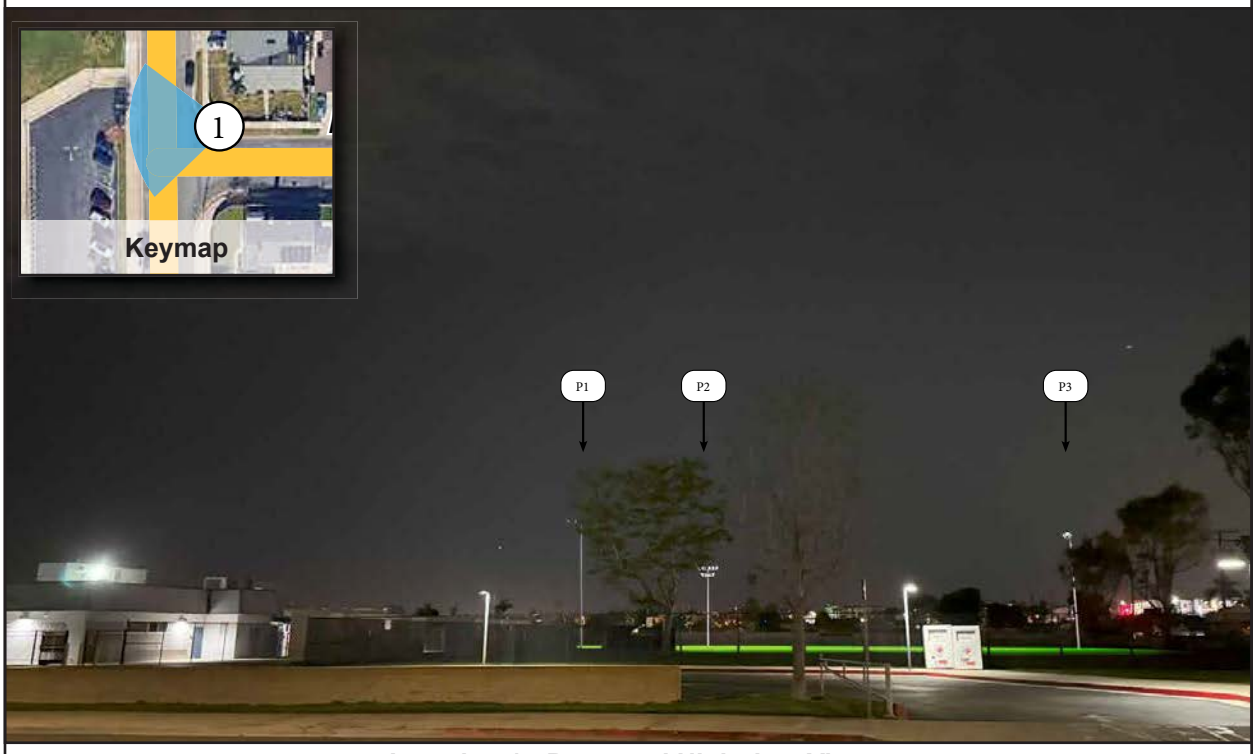
# 3. Environmental Analysis

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## Figure 11 - Location 1 – Existing and Proposed Nighttime Views




Location 1 - Existing Nighttime View



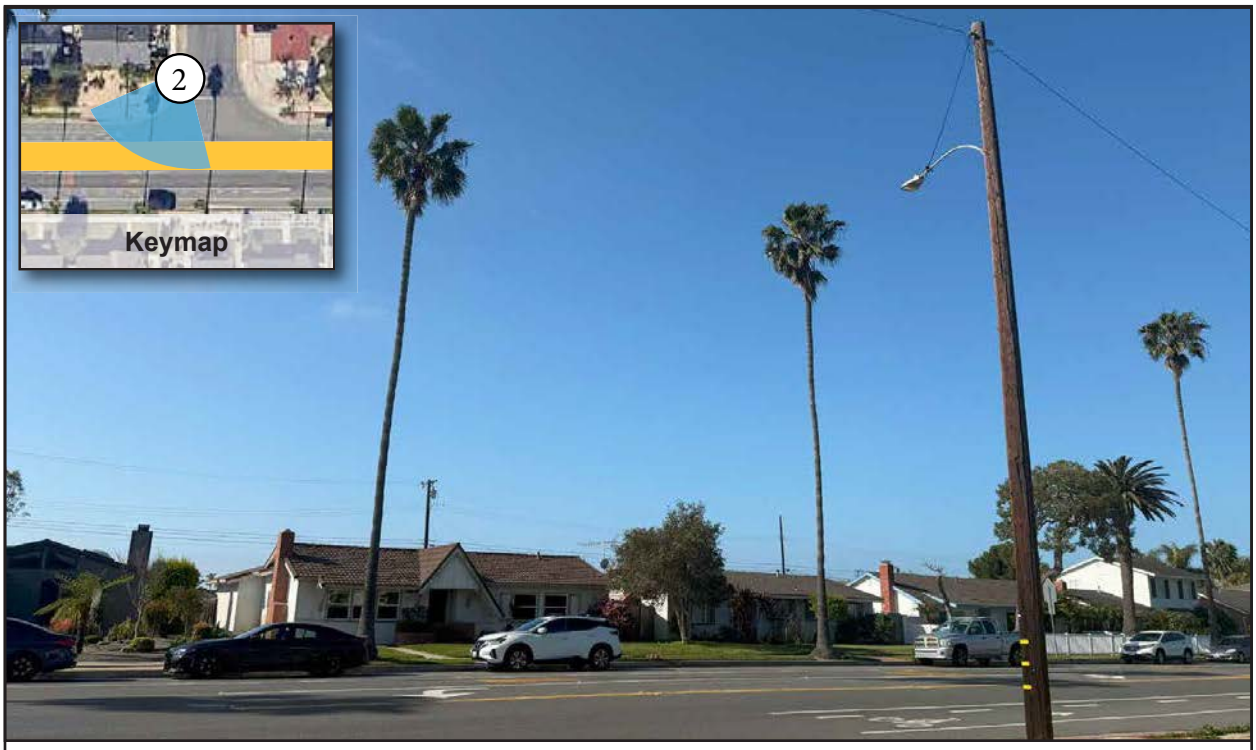

Location 1 - Proposed Nighttime View

*Source: PlaceWorks 2025.*

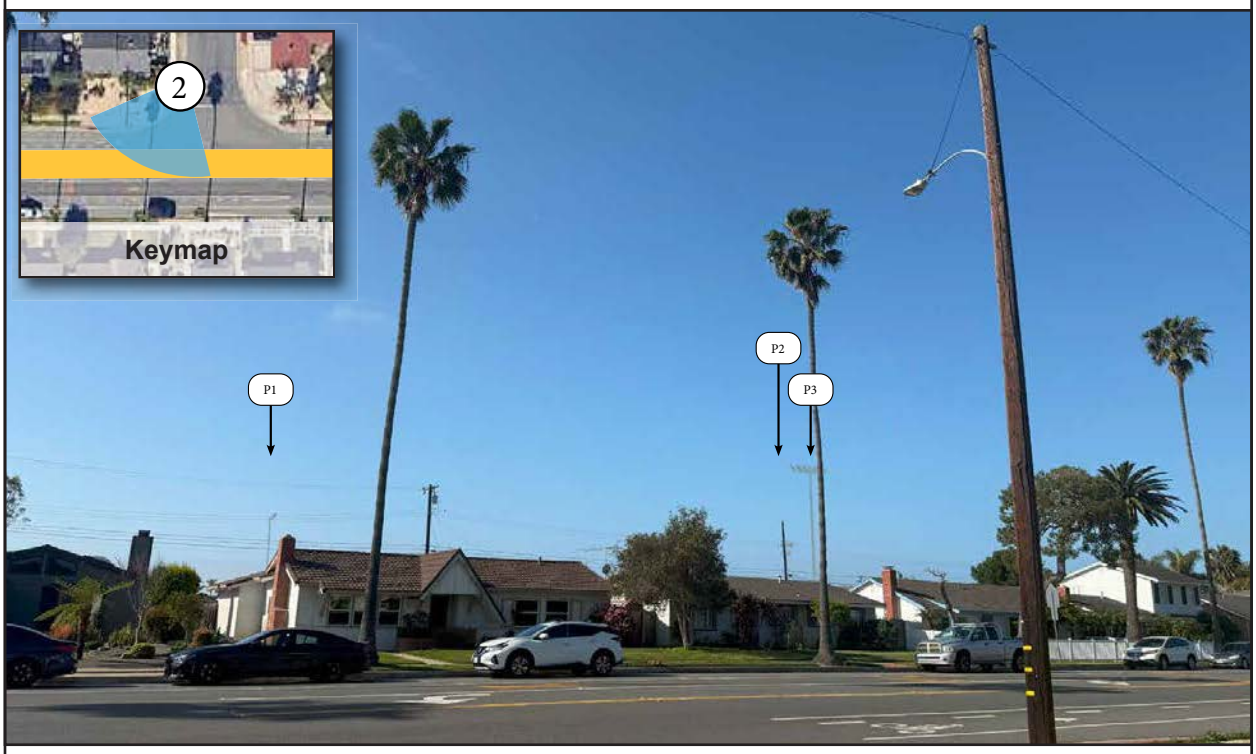
# 3. Environmental Analysis

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## Figure 12 - Location 2 – Existing and Proposed Daytime Views




Location 2 - Existing Daytime View



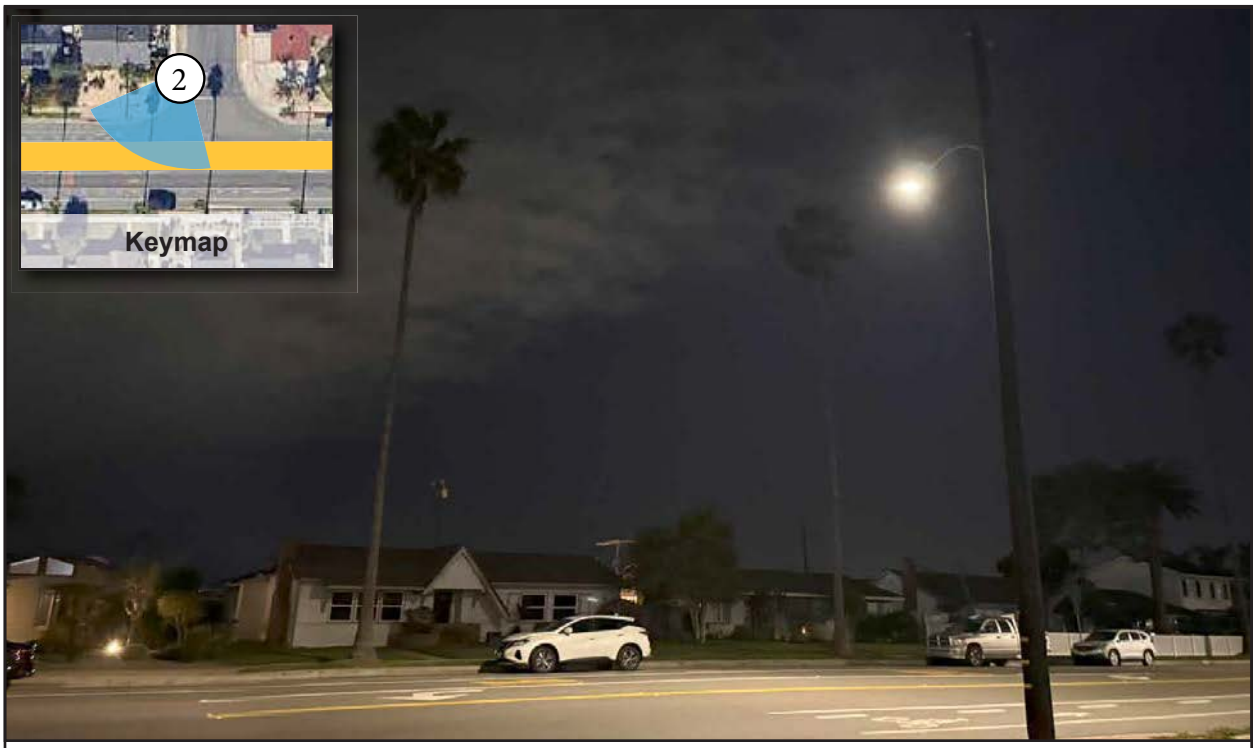

Location 2 - Proposed Daytime View

*Source: PlaceWorks 2025.*

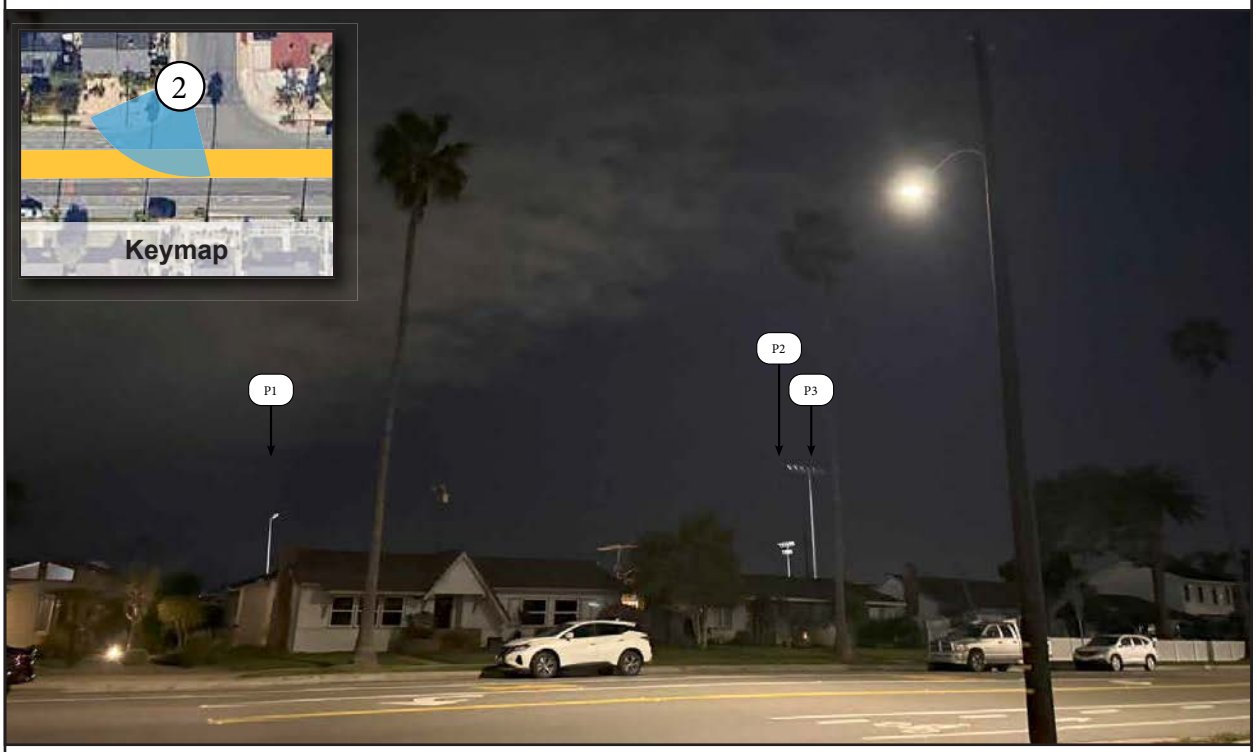
# 3. Environmental Analysis

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## Figure 13 - Location 2 – Existing and Proposed Nighttime Views




Location 2 - Existing Nighttime View



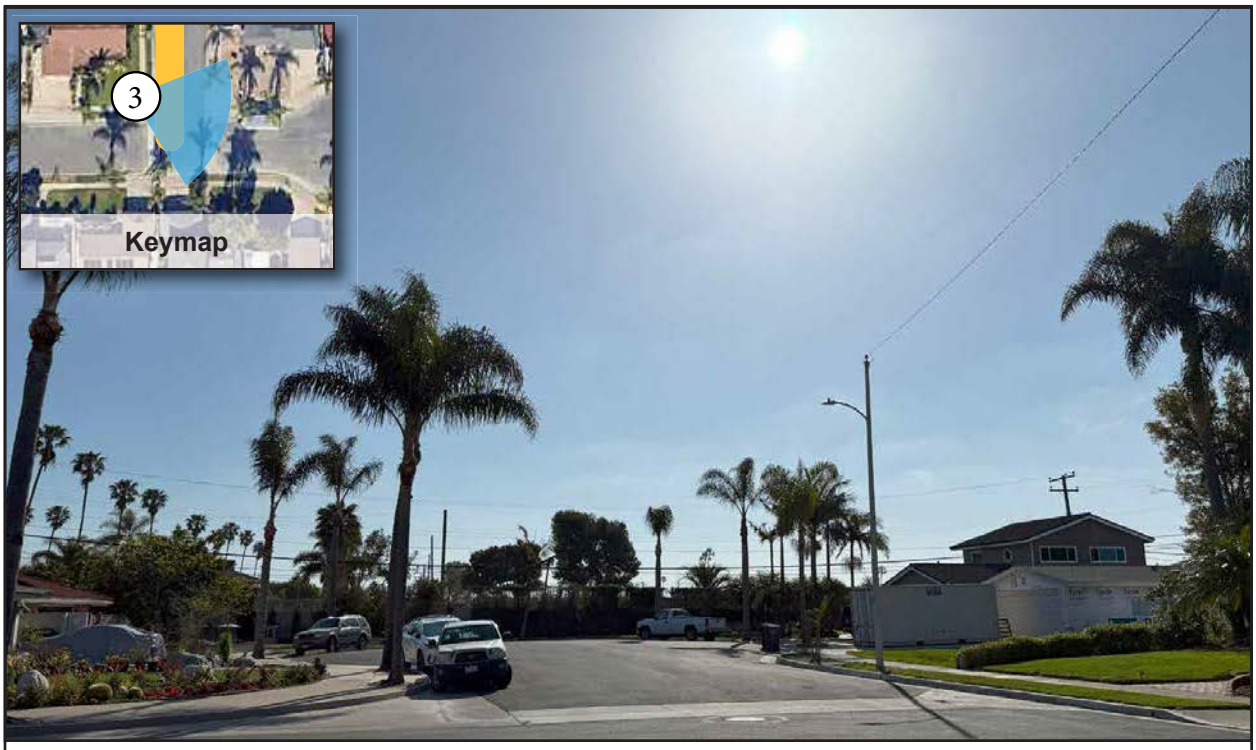

Location 2 - Proposed Nighttime View

*Source: PlaceWorks 2025.*

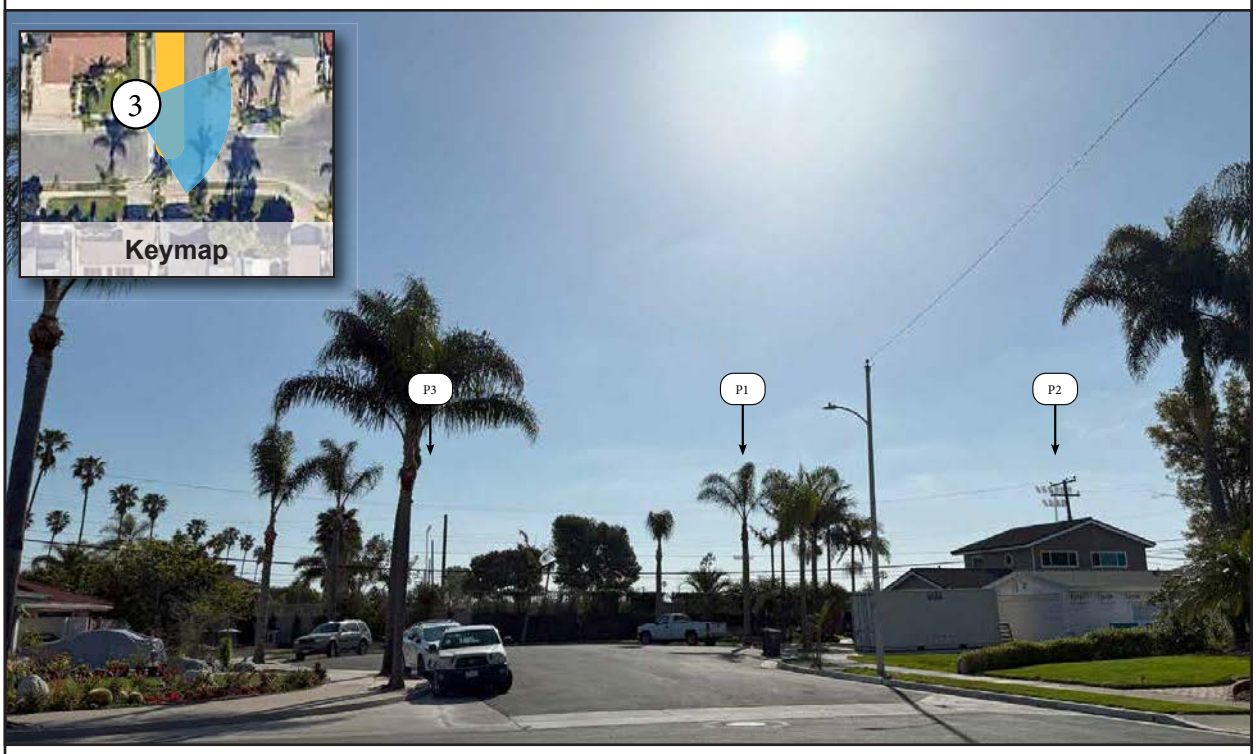
# 3. Environmental Analysis

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## Figure 14 - Location 3 – Existing and Proposed Daytime Views




Location 3 - Existing Daytime View




Location 3 - Proposed Daytime View

*Source: PlaceWorks 2025.*

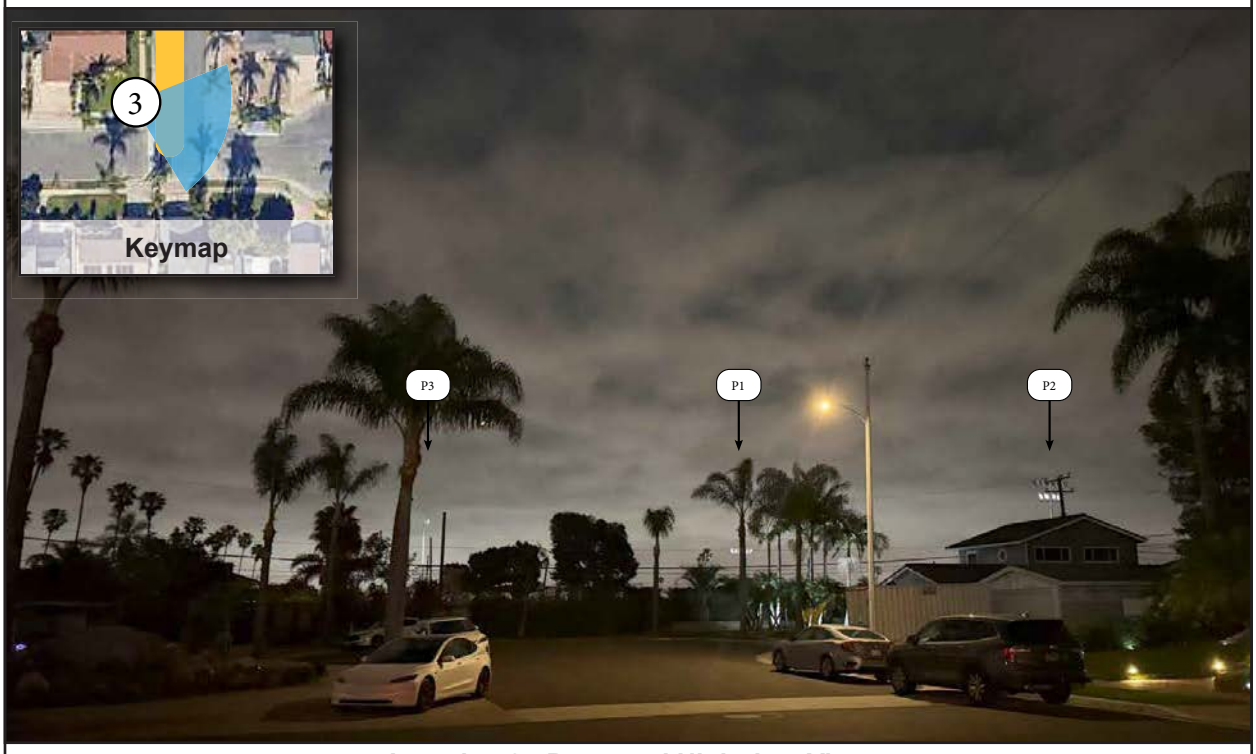
# 3. Environmental Analysis

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## Figure 15 - Location 3 – Existing and Proposed Nighttime Views




Location 3 - Existing Nighttime View




Location 3 - Proposed Nighttime View

*Source: PlaceWorks 2025.*

# 3. Environmental Analysis

# 3.2 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:

**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?**

**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 campus and project site are mapped as 'Urban and Built-up Land' (DOC 2022). The project site is on the northwest corner of the existing Peterson ES campus. The campus, including the project site, are in an urbanized area and no farmland exist onsite nor in the immediate surrounding area. The project site is exclusively surrounded by residential uses, with Talbert Channel to the west of the campus. The closest farmland is "Unique Farmland" along the Santa Ana River, approximately two miles east of the project site. 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.

**b) 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. The campus, including the project site, are in an urbanized area and no farmland exist onsite nor in the immediate surrounding area. According to the California Williamson Act Enrollment Finder, there is no Williamson Act contract in effect on the project site. The closest location for a Williamson Act contract is Catalina Island, approximately 20 miles west (DOC 2024). Therefore, the proposed project would not conflict with an existing Williamson Act contract, and no impact would occur.

**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))?**

**No Impact.** The City of Huntington Beach Zoning Map designates the campus as Public/Semipublic (PS) (Huntington Beach 2025). The proposed project would not change the zoning designation of the existing

campus and would not impact any properties zoned for forestland and timberland uses. The project site is developed within the Peterson ES 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) Result in the loss of forest land or conversion of forest land to non-forest use?**

**No Impact.** The project site is on the northwestern portion of the existing Peterson ES campus. No forest land uses are present on-site nor in the immediate vicinity (as discussed in Sections 3.2(a) through (c), above). Development of the proposed project would not result in the loss or conversion of forest land into non-forest use. Therefore, no impact would occur.

**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?**

**No Impact.** The project site is on the northwestern portion of the existing Peterson ES campus. No forest land uses exist on-site nor in the immediate vicinity. As stated in Section 3.2(a), the closest classified farmland is approximately two miles east of the project site and is classified as "Unique Farmland." Construction of the proposed project would occur within the boundaries of the project site and would not disturb any 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 non-agricultural uses or forest land to non-forest use. Therefore, no impact would occur.

## 3.3 AIR QUALITY

The Air Quality section addresses the impacts of the proposed project on ambient air quality and the exposure of people, especially sensitive individuals, to unhealthy pollutant concentrations. A background discussion on the air quality regulatory setting, meteorological conditions, existing ambient air quality in the vicinity of the project site, and air quality modeling can be found in Appendix A.

The primary air pollutants of concern for which ambient air quality standards (AAQS) have been established are ozone ($O_3$), carbon monoxide (CO), coarse inhalable particulate matter ($PM_{10}$), fine inhalable particulate matter ($PM_{2.5}$), sulfur dioxide ($SO_2$), nitrogen dioxide ($NO_2$), and lead (Pb). Areas are classified under the federal and California Clean Air Act as either in attainment or nonattainment for each criteria pollutant based on whether the AAQS have been achieved. The South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District (South Coast AQMD), is designated nonattainment for $O_3$ and $PM_{2.5}$ under the California and National AAQS, nonattainment for $PM_{10}$ under the California AAQS, and nonattainment for lead (Los Angeles County only) under the National AAQS (CARB 2024).

Furthermore, the South Coast AQMD has identified regional thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including VOC, CO, $NO_X$, $SO_2$, $PM_{10}$, and $PM_{2.5}$. Development projects below the regional significance thresholds are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard or contribute substantially to an existing or projected air quality

violation. Where available, the significance criteria established by the South Coast AQMD may be relied upon to make the following determinations.

Would the project:

**a) Conflict with or obstruct implementation of the applicable air quality plan?**

**Less Than Significant Impact.** The South Coast AQMD adopted the 2022 Air Quality Management Plan (AQMP) on December 2, 2022. Regional growth projections are used by South Coast AQMD to forecast future emission levels in the SoCAB. For southern California, these regional growth projections are provided by the Southern California Association of Governments (SCAG) and are partially based on land use designations in city/county general plans. Typically, only large, regionally significant projects have the potential to affect the regional growth projections. In addition, a consistency analysis is generally only required in connection with the adoption of General Plans, specific plans, and significant projects. Changes in population, housing, or employment growth projections have the potential to affect SCAG's demographic projections and therefore the assumptions in South Coast AQMD's AQMP. These demographic trends are incorporated into SCAG's 2024–2050 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) to determine priority transportation projects and vehicle miles traveled in the SCAG region.

Changes in population, housing, or employment growth projections have the potential to affect SCAG's demographic projections and the assumptions in South Coast AQMD's AQMP. The proposed project involves the installation of three lighting poles at an existing field on the Peterson ES campus. No new permanent buildings would be developed, and no increase in student or staff capacity would occur upon implementation of the proposed lighting installation.

Based on its scope and nature, the proposed project would not substantially affect housing, employment, or population projections in the region. Additionally, as demonstrated in Section 3.3(b), the regional emissions generated by the operational phase of the proposed project would be less than the South Coast AQMD emissions thresholds and would therefore not be considered by South Coast AQMD to be a substantial source of air pollutant emissions that would have the potential to affect the attainment designations in the SoCAB. Therefore, the proposed project would not affect the regional emissions inventory or conflict with strategies in the 2022 AQMP. Impacts would be less than significant.

**b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?**

**Less Than Significant Impact.** The following describes project-related impacts from regional short-term construction activities and regional long-term operation of the proposed project.

## Regional Short-Term Construction Impacts

Construction activities would generate air pollutants. These emissions would primarily be 1) exhaust from off-road diesel-powered construction equipment; 2) dust generated by construction activities; 3) exhaust from on-road vehicles; and 4) off-gassing of volatile organic compounds (VOCs) from paints and asphalt.

# 3. Environmental Analysis

Construction activities associated with the proposed project are anticipated to disturb approximately 0.07 acre on the project site. The proposed project would involve site preparation, utility trenching, field lighting installation, and paving. Construction would occur over three months starting in June 2026. Construction emissions were estimated using the California Emissions Estimator Model (CalEEMod), Version 2022.1, and are based on the preliminary construction duration provided by the District. The results of the construction emissions modeling are shown in Table 3, *Maximum Daily Regional Construction Emissions*, and show that the maximum daily emissions for $NO_X$, CO, $SO_2$, $PM_{10}$, and $PM_{2.5}$ from construction-related activities would be less than their respective South Coast AQMD regional significance threshold values.

**Table 3 Maximum Daily Regional Construction Emissions**

| Construction Phase | Pollutants (lb/day)[1, 2] | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
| Site Preparation | 1 | 6 | 6 | <1 | 1 | <1 |
| Utility Trenching | <1 | 2 | 5 | <1 | <1 | <1 |
| Field Lighting Installation | <1 | 2 | 2 | <1 | 1 | <1 |
| Paving | <1 | <1 | <1 | <1 | <1 | <1 |
| Architectural Coating | <1 | 1 | 1 | <1 | <1 | <1 |
| Paving & Architectural Coating Overlap | <1 | 1 | 2 | <1 | <1 | <1 |
| **Maximum Daily Construction Emissions** | | | | | | |
| Maximum Daily Emissions | 1 | 6 | 6 | <1 | 1 | <1 |
| **South Coast AQMD Regional Construction Threshold** | **75** | **100** | **550** | **150** | **150** | **55** |
| **Significant?** | **No** | **No** | **No** | **No** | **No** | **No** |

Source: CalEEMod Version 2022.1., South Coast AQMD 2023.
[1] Based on the preliminary information provided by the District. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by South Coast AQMD of construction equipment.
[2] Includes implementation of fugitive dust control measures required by South Coast AQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 25 miles per hour on unpaved surfaces, and street sweeping with Rule 1186–compliant sweepers.

## Long-Term Operation-Related Air Quality Impact

The proposed project involves installation of three lighting poles at an existing field on the Peterson ES campus and would result in additional after-school activity opportunities for students. This is anticipated to generate a net increase of 71 average daily vehicle trips to the Peterson ES campus (refer to Appendix D). In addition, the lighting equipment would result in only a nominal increase in electricity demand and would not result in direct generation of criteria air pollutants.

As shown in Table 4, *Maximum Daily Regional Operation Emissions*, it is anticipated that operation of the proposed project would result in minimal emissions overall and would not exceed the South Coast AQMD regional operation-phase significance thresholds. Impacts to the regional air quality associated with operation of the proposed project would be less than significant.

**Table 4 Maximum Daily Regional Operation Emissions**

| Source | Maximum Daily Emissions (lbs/Day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$ | $PM_{2.}$ |
| **Emissions** | | | | | | |
| Mobile[1] | <1 | 1 | 3 | <1 | 1 | <1 |
| Area | <1 | <1 | <1 | <1 | <1 | <1 |
| Energy | <1 | <1 | <1 | <1 | <1 | <1 |
| **Total** | **<1** | **1** | **3** | **<1** | **1** | **<1** |
| **South Coast AQMD Regional Threshold** | **55** | **55** | **550** | **150** | **150** | **55** |
| **Exceeds Threshold?** | **No** | **No** | **No** | **No** | **No** | **No** |

Sources: CalEEMod Version 2022.1; South Coast AQMD 2023.
Notes: lbs: pounds. Highest winter or summer emissions report.
[1] Mobile emission calculations consider 71 weekday and Saturday vehicle trips, as provided by DJ&A Traffic Impact Study (Appendix D).

**c) Expose sensitive receptors to substantial pollutant concentrations?**

**Less Than Significant Impact.** The proposed project could expose sensitive receptors to elevated pollutant concentrations if it causes or significantly contributes to elevated pollutant concentration levels. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects.

## Construction LSTs

Localized significance thresholds (LSTs) are based on the California AAQS, which are the most stringent AAQS to provide a margin of safety in the protection of public health and welfare. They are designated to protect sensitive receptors most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. The screening-level construction LSTs are based on the size of the project site, distance to the nearest sensitive receptor, and Source Receptor Area (SRA). The nearest off-site sensitive receptors to the project site are the single-family residences along Indianapolis Avenue directly north of the project site. Other nearby off-site receptors include the single-family residences to the east and west of the project site. Additionally, on-site receptors at Peterson ES may be present during construction activities.

Air pollutant emissions generated by construction activities would cause temporary increases in air pollutant concentrations. Table 5, *Localized Construction Emissions,* shows the maximum daily construction emissions (pounds per day) generated during on-site construction activities compared with the South Coast AQMD's screening-level LSTs for sensitive receptors within 82 feet (25 meters), the closest and most conservative distance available, for $NO_X$, CO, $PM_{10}$, and $PM_{2.5}$. As shown in Table 5, construction of the proposed project would not generate construction-related on-site emissions that would exceed the screening-level LSTs. Thus, project-related construction activities would not have the potential to expose sensitive receptors to substantial

pollutant concentrations. Localized air quality impacts from construction activities would be less than significant.

**Table 5 Localized Construction Emissions**

| Construction Activity | Pollutants(lbs/day)[1] | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[2] | $PM_{2.5}$[2] |
| **South Coast AQMD ≤1.00 Acre LST** | **92** | **647** | **4.00** | **3.00** |
| Site Preparation | 6 | 6 | 1 | <1 |
| Utility Trenching | 2 | 4 | <1 | <1 |
| Field Lighting Installation | 6 | 7 | 1 | <1 |
| Paving | <1 | 2 | <1 | <1 |
| **Exceeds LST?** | **No** | **No** | **No** | **No** |

Source: CalEEMod Version 2022.1; South Coast AQMD 2008, 2011, and 2023.
Notes: In accordance with South Coast AQMD methodology, only on-site stationary sources and mobile equipment are included in the analysis. Screening level LSTs are based on receptors within 82 feet (25 meters) in SRA 18.
[1] Where specific information for project-related construction activities or processes was not available modeling was based on CalEEMod defaults. These defaults are based on construction surveys conducted by the South Coast AQMD.
[2] Includes fugitive dust control measures required by South Coast AQMD under Rule 403, such as watering disturbed areas a minimum of two times per day, reducing speed limit to 25 miles per hour on unpaved surfaces, and street sweeping with Rule 1186–compliant sweepers.

## Construction Health Risk

Emissions from construction equipment primarily consist of diesel particulate matter (DPM). In 2015, the Office of Environmental Health Hazards Assessment (OEHHA) adopted guidance for preparation of health risk assessments, which included the development of a cancer risk factor and non-cancer chronic reference exposure level for DPM over a 30-year time frame (OEHHA 2015). Currently, South Coast AQMD does not require the evaluation of long-term excess cancer risk or chronic health impacts for a short-term project. The proposed project is anticipated to be completed in approximately three months, which would limit the exposure of on- and off-site receptors. Furthermore, construction activities would not generate on-site exhaust emissions that would exceed the screening-level construction LSTs. Thus, construction emissions would not pose a health risk to on- and off-site receptors, and project-related construction health impacts would be less than significant.

## Operation LSTs

Operation of the proposed project would not generate substantial emissions from onsite stationary sources. Land uses that have the potential to generate substantial stationary sources of emissions include industrial land uses, such as chemical processing and warehousing operations where truck idling would occur onsite and would require a permit from South Coast AQMD. The proposed project involves the installation of light poles at the existing field on the Peterson ES campus and would not include uses typically associated with generating substantial stationary sources of emissions. The field lighting would only generate a nominal increase in electricity demand and would not directly generate criteria pollutants. Therefore, the proposed project would not expose receptors to substantial concentrations of criteria air pollutants, operational criteria air pollutant emissions would not exceed the California AAQS, and impacts would be less than significant.

### Carbon Monoxide Hotspots

Vehicle congestion has the potential to create pockets of CO called hotspots. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles are backed-up and idle for longer periods and are subject to reduced speeds. These pockets could exceed the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9.0 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations.

The SoCAB has been designated attainment under both the national and California AAQS for CO. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection to more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—in order to generate a significant CO impact (BAAQMD 2023). As shown in the traffic impact study, the project-related 71 average daily vehicle trips would be minimal compared to the AAQS screening levels (Appendix D). The proposed project would generate 16 new trips during the PM peak hour. When added to the nearest intersection with the highest existing PM peak hour trips (2,474 trips at Beach Boulevard and Indianapolis Avenue per Figure 4 of Appendix D), the proposed project's contribution would not exceed the 44,000 vehicles per hour threshold or 24,000 vehicles per hour screening criteria where mixing is substantially limited. The proposed project would not substantially increase CO hotspots at intersections, and impacts would be less than significant.

**d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?**

**Less Than Significant Impact.** The proposed project would not result in objectionable odors. The threshold for odor is if a project creates an odor nuisance pursuant to South Coast AQMD Rule 402, Nuisance, which states:

> A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

The type of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. The proposed project involves the installation of lighting at an existing field. Field lighting would not fall within the objectionable odors land uses or generate odors different than what is already generated onsite. Emissions from construction equipment, such as diesel exhaust and volatile organic compounds from architectural coatings and paving activities may generate odors. However,

these odors would be low in concentration, temporary, and would not affect a substantial number of people. Odor impacts would be less than significant.

## 3.4 BIOLOGICAL RESOURCES

Would the project:

**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?**

**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 has been previously disturbed by the development of the existing soccer fields

The City of Huntington Beach's Environmental Resources and Conservation Element identifies that several state- and federally listed species are known to occur in the City, including the western snowy plover, California least tern, Belding's savannah sparrow, coastal California gnatcatcher, light-footed clapper rail, and tricolored blackbird (Huntington Beach 2017a). Additionally, other special status species known to utilize habitats in and adjacent to the City include southern tarplant, monarch butterfly, white-tailed kite, silvery legless lizard, burrowing owl, northern harrier, peregrine falcon, loggerhead shrike, California brown pelican, black skimmer, and special-status bats. The proposed project is within the Orange County Transportation Authority (OCTA) habitat conservation plan/national community conservation plan area (HCP/NCCP); however, the City is not a participant of the OCTA HCP/NCCP (CDFW 2025). The project site and surrounding area are developed with urban uses and outside of any federally designated critical habitat (USFWS 2025a). Therefore, the proposed project would not impact any candidate, sensitive, or special status species. No impact would occur.

**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?**

**Less Than Significant 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 proposed project is within the OCTA HCP/NCCP, however, the City is not a participant of the OCTA HCP/NCCP (CDFW 2025). No federally designated critical habitat exist on-site or in the vicinity of the project site. The closest identified critical habitat is for Coastal California gnatcatcher, approximately 2.6 miles southeast of the project site (USFWS 2025a).

The National Wetlands Mapper maintained by the US Fish and Wildlife service identified a riverine habitat that borders the western boundary of project site in the Talbert Channel (USFWS 2025b). The proposed project would install field lighting and restripe the existing soccer fields, which would be restricted to the boundaries of the project site. Additionally, the project site does not contain any riparian habitat on-site. Therefore, less than significant impacts to riparian and sensitive natural communities would occur.

**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?**

**No Impact.** The project site is currently developed with the existing Peterson ES soccer fields. As discussed in Section 3.4(b), the National Wetlands Mapper identified a riverine habitat along the western boundary of the Peterson ES campus in the Talbert Channel. No wetlands or riverine habitats exist within the project site, and construction related activities would be limited to occurring on the project site (USFWS 2025b). Therefore, the proposed project would not have a substantial adverse effect on protected wetlands, and no impact would occur.

**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?**

**Less Than Significant Impact With Mitigation Incorporated.** The project site is in an urbanized area of the City of Huntington Beach, developed with the existing Peterson ES soccer fields, and the surrounding areas are developed with residential uses. No federally designated critical habitat exists on-site or in the vicinity of the project site (USFWS 2025a). The project site contains two trees that could be used for nesting by bird species. The proposed project would protect the on-site trees in place. However, construction activities have the potential impact to nesting birds. Nesting birds are protected by the Migratory Bird Treaty Act (MBTA), which governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests (US Code, Title 16, Sections 703–712). The MBTA prohibits the take, possession, import, export, transport, sale, purchase, barter, or offering of these activities, except under a valid permit or as permitted in the implementing regulations. The United States Fish and Wildlife Service administers permits to take migratory birds in accordance with the MBTA. The proposed project would implement Mitigation Measure BIO-1 (MM BIO-1). MM BIO-1 would require preconstruction surveys for nesting birds and raptors three days prior to the commencement of vegetation clearing or ground-disturbing activities. Compliance with the existing California Department of Fish and Wildlife regulations and implementation of MM BIO-1 would ensure that impacts remain less than significant to nesting and migratory birds.

**Mitigation Measures**

BIO-1 **Preconstruction Avian Survey.** If project construction-related activities (i.e., vegetation clearing or ground-disturbing activities) take place during the breeding season (February 15 through August 31), preconstruction surveys for nesting birds and raptors (birds of prey) within the existing vegetation on-site, which would be removed during construction, shall be conducted by a qualified biologist at least 3 days prior to the commencement of the vegetation clearing or ground-disturbing activities. If any bird listed under the Migratory Bird Treaty Act is found to be nesting within the project site or within the area of construction-related activities, an adequate protective buffer zone shall be established by a qualified biologist to protect the nesting site. This buffer shall be a minimum of 75 feet from the project activities for passerine birds and a minimum of 200 feet for raptors. The distance shall be determined by a qualified biologist based on the site conditions (topography, if the nest is in a line of sight

of the construction, and the sensitivity of the birds nesting). Additional protective measures shall include establishment of clearly delineated exclusion zones (i.e., demarcated by identifiable fencing, such as orange construction fencing or equivalent) around each nest location as determined by a qualified biologist, taking into account the species of birds nesting, their tolerance for disturbance, and proximity to existing development. The nest site(s) shall be monitored by a qualified biologist periodically to see if the birds are stressed by the construction activities and if the protective buffer needs to be increased. Once the young have fledged and are flying well enough to avoid project construction zones (typically by August), the project can proceed without further regard to the nest site(s).

**e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

**Less Than Significant Impact.** The Huntington Beach General Plan Environmental Resources and Conservation Element contains Policies A and B, which protect and maintain wetland areas and their buffers; and Policy C to designate and manage environmentally sensitive lands (Huntington Beach 2017a). The City General plan includes Goal ERC-9, which states that Huntington Beach's trees and groves serve important biological functions for nesting and roosting birds, butterflies, and raptor species. Additionally, Huntington Beach Municipal Code includes Chapter 13.50, Regulation of Trees, which sets standards protecting or governing the types of trees planted in the public right-of-way.

As substantiated in Section 3.4(c), the proposed project does not contain any wetlands and, as stated in Section 3.4(b), the proposed project does not contain any environmentally sensitive lands. The proposed project would not disturb any trees in the public right of way, and as discussed in Section 3.4(d), MM BIO-1 would protect nesting birds and raptors in the event they are found on the project site. Additionally, trees on the project site would not be removed but protected in place. The proposed project would not conflict with local policies or ordinances; therefore, a less than significant impact would occur.

**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?**

**No Impact.** The project site is developed with the existing Peterson ES soccer fields. The proposed project is within the OCTA HCP/NCCP, but the City is not a participant of the OCTA HCP/NCCP (CDFW 2025). The proposed project would not affect the HCP/NCCP or other approved local, regional, or state conservation plan, and therefore no impact would occur.

# 3.5 CULTURAL RESOURCES

Would the project:

**a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?**

**No 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 criteria:

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.

The Peterson ES campus opened in September 1997 and subsequent structures on campus were developed (CDE 2025). The campus is not listed as a historical resource in the National Register of Historic Places (NPS 2025). Additionally, Peterson ES is not listed in the California Historical Landmarks, Points of Historical Interest, or State Historic Structures (OPH 2025). The closet historical resources are the Newland House (19820 Beach Blvd) and the Huntington Beach Public Library on Triangle Park (525 Main Street), which are 0.75 mile north and west, respectively. There are no historic resources on the project site or campus that would be considered historically significant pursuant to Section 15064.5. Therefore, no impact to historical resources would occur.

**b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?**

**Less Than Significant Impact With Mitigation Incorporated.** Earthwork associated with the construction of the proposed project would include boring and utility trenching. The earthwork activities associated with the proposed project would generally be surface level since no subterranean levels are proposed, which typically requires extensive excavation. Additionally, the project site has been previously disturbed with the existing Peterson ES campus buildings and school infrastructure.

Since no subterranean levels are proposed and no archaeological resources are known to exist on-site, it is unlikely that the proposed project would encounter unknown archaeological resources. Nevertheless, the potential still exists for ground-disturbing activities from the proposed project to uncover unknown archaeological resources. Implementation of Mitigation Measure CUL-1 (MM CUL-1) would ensure, in the event archaeological resources are discovered during ground disturbing activities, that archaeological resources would be recovered in accordance with state and federal requirements. Additionally, an NAHC SLF was

conducted and yielded a negative result, which indicates that no known sacred sites or tribal cultural resources (TCR) exist within the vicinity of the project site (Appendix B). However, the potential for unearthing TCRs exist. Implementation of MM TCR-1 (see Section 3.18) would ensure a tribal archaeological monitor is present during ground disturbing activities. Implementation of MMs CUL-1 and TCR-1 would reduce impacts to archaeological resources to less than significant.

### Mitigation Measures

CUL-1 Prior to the start of ground disturbance activity, a qualified archaeological monitor shall be identified to be on call during ground-disturbing activities. If archeological resources are discovered during excavation and/or construction activities, construction shall stop within 25 feet of the find, and the qualified archaeologist shall be consulted to determine whether the resource requires further study. The archaeologist shall make recommendations to the District to protect the discovered resources. Archaeological resources recovered shall be offered to a repository with a retrievable collection system and an educational and research interest in the materials, such as the University of California Museum of Paleontology, or a responsible public or private institution with a suitable repository willing to and capable of accepting and housing the resource.

**c) Disturb any human remains, including those interred outside of dedicated cemeteries?**

**Less Than Significant Impact.** A significant impact would occur if the proposed project would disturb previously interred human remains. Given the project site was previously disturbed by Peterson ES uses, it is unlikely to support conditions conducive to the discovery of human remains. However, there is a remote possibility that human remains could be encountered during excavation and grading activities associated with the proposed project.

In the unlikely event that human remains are encountered during ground-disturbing activities, California Health and Safety Code Section 7050.5 requires that disturbance of the site shall halt and remain halted. The County Coroner shall investigate the circumstances, manner, and cause of any death and recommend the treatment and disposition of the human remains to the person responsible for the excavation or to his or her authorized representative, in the manner provided in Section 5097.98 of the California Public Resources Code. The coroner is required to make a determination within two working days of being notified of the discovery of the human remains. If the coroner determines that the remains are not subject to his or her authority or has reason to believe they are Native American, he or she shall contact, by telephone within 24 hours, the NAHC, who will contact the "most likely descendant." The most likely descendant shall receive access to the discovery and will provide recommendations or preferences for treatment of the remains within 48 hours of accessing the discovery site. Disposition of human remains and any associated grave goods, if encountered, shall be treated in accordance with procedures and requirements in Sections 5097.94 and 5097.98 of the Public Resources Code; Section 7050.5 of the California Health and Safety Code; and CEQA Guidelines Section 15064.5.

While unlikely, any accidental discovery of human remains during project construction and operation would be required to comply with all applicable laws and regulations establishing the proper handling of human remains. Compliance with these laws and regulations would ensure that proposed project would result in a less than.

# 3.6 ENERGY

Would the project:

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

**Less Than Significant Impact.** The following discusses the potential energy demands from construction activities associated with the construction and operation of the proposed project.

## Short-Term Construction Impacts

### *Electrical Energy*

The majority of construction equipment would be gas or diesel powered, and electricity would not be used to power most of the construction equipment. If used, it is anticipated that the majority of electric-powered construction equipment would be hand tools (e.g., power drills, table saws) and lighting, which would result in minimal electricity usage during construction activities. Therefore, project-related construction activities would not result in wasteful or unnecessary electricity demands, and impacts would be less than significant.

### *Natural Gas Energy*

It is not anticipated that construction equipment used for the proposed project would be powered by natural gas, and no natural gas demand is anticipated during construction. Therefore, impacts would be less than significant with respect to natural gas usage.

### *Transportation Energy*

Transportation energy use during construction of the proposed project would come from delivery vehicles, haul trucks, and construction employee vehicles. In addition, transportation energy demand would come from use of off-road construction equipment. It is anticipated that the majority of off-road construction equipment, such as those used during site preparation and field installation, would be gas or diesel powered.

The use of energy resources by vehicles and equipment would fluctuate according to the phase of construction and would be temporary. In addition, all construction equipment would cease operating upon completion of project construction. Thus, impacts related to transportation energy use during construction would be temporary and would not require expanded energy supplies or the construction of new infrastructure. Furthermore, to limit wasteful and unnecessary energy consumption, the construction contractors would be required to minimize nonessential idling of construction equipment during construction, in accordance with the California Code of Regulations, Title 13, Article 4.8, Chapter 9, Section 2449.

Construction trips would also not result in unnecessary use of energy because the project site is centrally located in a major metropolitan area and is served by numerous regional highway systems (e.g., SR-39 and I-405) that provide the most direct routes from various areas of the region. Thus, energy use during construction of the proposed project would not be considered inefficient, wasteful, or unnecessary. Impacts would be less than significant.

# 3. Environmental Analysis

## Long-Term Impacts During Operation

Operation of the proposed project would generate new demand for electricity and transportation energy on the project site. Operational use of energy would include field lighting.

### *Electrical Energy*

The proposed increase in electricity consumption from the proposed project is shown in Table 6, *Operation-Related Electricity Consumption*.

**Table 6 Operation-Related Electricity Consumption**

| Land Use | Electricity (kWh/year)[1] |
|---|---|
| Field Lighting | 2,101 |

Source: Appendix A.
Note: kWh=kilowatt-hour
[1] Based on District-provided schedule (see Table 1) and 805-watt electricity usage from NV-F5-15-805W-40K7-SINGLE-HEAD lighting poles. See Appendix A.

Electrical service to the project site would continue to be provided by Southern California Edison (SCE) through connections to existing off-site electrical lines as needed. As shown in Table 6, the new electricity demand from field lighting would be 2,101 kilowatt-hours per year. The new field lighting would use LED lights and would only be operated during the evening until 9:00 pm at the latest, similar to uses occurring during the summer months.[3] Therefore, operation of the proposed project would not result in wasteful, inefficient, or unnecessary electricity demands and would result in a less than significant impact related to electricity.

### *Natural Gas Energy*

The proposed project would involve installation of field lighting, which would not generate demand for natural gas. Therefore, operation of the proposed project would have no impact with respect to natural gas usage.

### *Transportation Energy*

The proposed project would result in the consumption of transportation energy during operation from the use of motor vehicles associated with students, staff, and visitors to the soccer field later in the evenings with the use of the new field lighting, similar to uses occurring during the summer months. The efficiency of the motor vehicles in use (average miles per gallon) is unknown and highly variable. Thus, estimates of transportation energy use are based on the overall vehicle miles traveled (VMT) and related transportation energy use.

Based on the traffic impact study, the proposed project would generate a net increase of 71 average daily vehicle trips and 16 trips during the PM peak hour (Appendix D). However, since the proposed project would continue to be a local-serving public facility for existing sports and athletic activities, the proposed project would be screened from requiring a detailed VMT analysis, as described in Section 3.17, *Transportation*. While the proposed project would increase the hours of operation for the soccer field, the field lighting would not change the nature

[3] See Table 1, *Existing Programming and Activities and Proposed Programming and Activities*, in Section 1.3, *Project Description*, for more information on the anticipated use of the lighting at the soccer field.

of the existing use, which is to serve local sports and athletic activities. Therefore, the proposed project would not result in any VMT impacts during operation.

Additionally, because the proposed project would be completed in 2026, it is anticipated that users of the proposed lighted sports field in 2026 would drive the same vehicles they currently drive. Furthermore, fuel efficiency generally improves with later year vehicles due to regulatory compliance such as vehicle manufacturer compliance with the CAFE standards. Thus, any turnover in vehicles with the users of the proposed lighted sports field would improve overall fuel efficiency compared to vehicle fuel efficiencies experienced under existing conditions, resulting in a lower per capita fuel consumption, assuming travel distances, travel modes, and trip rates remain the same. Also, electricity consumed in California is required to meet the increasing renewable energy mix requirements under the State's RPS, accelerated by SB 100, so greater and greater proportions of electricity consumed for transportation energy demand envisioned under the proposed project would continue to be sourced from renewable energy sources rather than fossil fuels. Because vehicle fuel efficiencies would improve year over year through the buildout and result in a decrease in overall per capita transportation energy consumption and the proposed project would be local-serving and not result in VMT impacts, impacts would be less than significant with respect to operation-related fuel usage.

**b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?**

**Less Than Significant Impact.** The following evaluates consistency of the proposed project with California's Renewables Portfolio Standard program.

### California Renewables Portfolio Standard Program

The state's electricity grid is transitioning to renewable energy under California's Renewable Energy Program. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. Electricity production from renewable sources is generally considered carbon neutral. Executive Order S-14-08, signed in November 2008, expanded the state's renewable portfolios standard (RPS) to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Senate Bill 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. Senate Bill 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

On September 10, 2018, Governor Brown signed SB 100, which supersedes the SB 350 requirements. Under SB 100, the RPS for public owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. Additionally, SB 100 also established a new RPS requirement of 50 percent by 2026. The bill also established a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Additionally, SB 1020, signed into law on September 16, 2022, adds interim targets to SB 100 framework to require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040. Under SB 100 and SB 1020, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

The statewide RPS goal is not directly applicable to individual development projects, but to utilities and energy providers such as SCE, which is the utility that would provide all of electricity needs for the proposed project. Compliance of SCE in meeting the RPS goals would ensure the State meets its objective in transitioning to renewable energy. Therefore, implementation of the proposed project would not conflict with or obstruct implementation of California's RPS Program and impacts would be less than significant.

# 3.7 GEOLOGY AND SOILS

Would the project:

**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.**

**No Impact.** The project site is not in an Alquist-Priolo Earthquake Fault Zone for fault rapture hazards (DOC 2025a). The nearest Alquist-Priolo Earthquake Fault Zone is the Newport-Inglewood-Rose Canyon fault zone, approximately 0.15 mile northwest of the project site. Although the project site is near an Alquist-Priolo Earthquake Fault Zone and would be subject to ground shaking, the project site does not lie on a fault rupture hazard zone. Since no active faults exist on-site, surface rupture of a known fault would not occur. No impact would occur.

**ii) Strong seismic ground shaking?**

**Less Than Significant Impact.** The project site is not located within an established Alquist-Priolo Earthquake Fault Zone (DOC 2025a). However, the project site, like all areas in Southern California, is subject to ground movement associated with earthquakes along the active faults. The degree of ground shaking, and earthquake-induced damage is dependent on multiple factors, such as distances to causative faults, earthquake magnitudes, and expected ground accelerations. The closest active fault is the Newport-Inglewood-Rose Canyon fault approximately 0.15 mile northwest of the project site. The proposed project design would be approved by the Division of the State Architect (DSA) to ensure that the structures are sufficiently designed to withstand ground shaking.

The existing campus has previously been developed in accordance with seismic design parameters of the California Building Code (CBC), which regulates all building and construction projects and implements a minimum standard for building design and construction that includes specific requirements for seismic safety, evacuation, foundations, retaining walls, and site demolition. Compliance with DSA's review and design parameters would ensure that impacts are less than significant.

**iii) Seismic-related ground failure, including liquefaction?**

**Less Than Significant Impact.** Liquefaction refers to loose, saturated sand, or gravel deposits that lose their load-supporting capability when subjected to intense shaking. According to General Plan Figure HAZ-3, Seismic Hazard Zones (Liquefaction and Landslides), the project site is within a high to very high liquefaction potential zone (Huntington Beach 2017b). As such, the proposed project would be subject to the seismic requirements of the CBC and DSA. Therefore, compliance with the established standards would ensure that impacts from liquefaction are less than significant, and no mitigation measures are necessary.

**iv) Landslides?**

**No Impact.** Significant landslides and erosion typically occur on steep slopes where stormwater and high winds can carry topsoil down hillsides. The project site is essentially flat and developed. The Department of Conservation, California Geological Survey (CGS) landslide zone illustrates that no landslides have occurred at or in the immediate vicinity of the project site (DOC 2025a). The proposed project has no potential to result in or be in the path of landslides. Therefore, the proposed project would not cause potentially substantial adverse effects related to slope and stability or seismically induced landslides, and no impact would occur.

**b) Result in substantial soil erosion or the loss of topsoil?**

**Less Than Significant Impact.** Erosion is a normal and inevitable geologic process whereby earthen materials are loosened, worn away, decomposed, or dissolved and removed from one place and transported to another. The project site contains relatively flat terrain, which decreases the project's potential to accelerate erosion. The project site is developed with existing athletic facilities and associated structures. Implementation of the proposed project would require limited earthwork which include grading for proper base and slope, drill holes for installation of proposed light poles, and utility trenching. Additionally, the proposed project does not contain any subterranean levels and would not require extensive excavation, which could expose more soils to erosion. Because the proposed project involves grading of less than one acre (3,000 square feet), the District would not be required to comply with National Pollutant Discharge Elimination System (NPDES) permitting regulations, including the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). However, the proposed project's construction contractor would implement best management practices (BMP) during the construction phase. Types of BMPs that would help minimize impacts from soil erosion could include:

- Erosion controls (e.g., earth dikes and swales, mulching, slope drains, compost blankets)
- Sediment controls (e.g., silt fence, sediment trap, sandbag or straw bale barriers)
- Tracking controls (e.g., stabilized construction entrance/exit, tire wash)
- Non-storm water management (e.g., dewatering practices, vehicle and equipment cleaning)
- Materials and waste management (e.g., material storage, hazardous waste management, soil management)
- Good housekeeping practices.

# 3. Environmental Analysis

Adherence to the BMPs and adherence with local, regional, and state codes and requirements for erosion control and grading during construction would reduce, prevent, or minimize soil erosion from project-related grading and construction activities. Therefore, the proposed project would not result in a substantial soil erosion or loss of topsoil, and a less than significant impact would occur.

**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?**

**Less Than Significant Impact.** The project site is generally flat, and as previously discussed in Section 3.7(a)(iv), is not within an area subject to landslides. As discussed in Section 3.7(a)(iii), the project site is subject to liquefaction, and compliance with CBC and DSA standards would reduce potential impacts related to liquefaction to less than significant.

Seismically induced lateral spreading involves primarily lateral movement of earth materials due to ground shaking. It differs from the slope failure in that complete ground failure involving large movement does not occur due to the relatively smaller gradient of the initial ground surface. Lateral spreading is demonstrated by near-vertical cracks with predominantly horizontal movement of the soil mass involved. Due to the project site being in an identified liquefaction zone, there is the potential for lateral spreading (Caltrans 2020). However, because the project site is flat and would comply with the applicable CBC and DSA standards, impacts related to lateral spreading would be less than significant.

The major cause of ground subsidence is the excessive withdrawal of groundwater. Soils with high silt or clay content are particularly susceptible to subsidence. The proposed project soil content is composed of Bolsa silt loam, and Bolsa silt loam (drained), which includes approximately 22 percent of clays, and approximately 70 percent of silts (USDA 2025). Although, the soils at the project site have a high silt content, General Plan Figure HAZ-4, Subsidence, identifies that the project site is in an area with relatively low subsidence levels: -0.1 to -0.2 (Huntington Beach 2017b). Additionally, collapsible soils are typically geologically young, unconsolidated sediments of low density that may compress under the weight of structures. The proposed project would not include earthwork to extreme depths and would not result in any withdrawal of groundwater during construction or operation. The proposed project would adhere to the CBC and DSA's review. Therefore, impacts associated with subsidence would be less than significant.

**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?**

**Less Than Significant Impact.** Expansive soils contain certain types of clay minerals that shrink when they dry out and swell when soils become wet, resulting in the potential for cracking building foundations and in some cases, structural distress of the buildings themselves. Arid or semiarid areas with seasonal changes of soil moisture experiences, such as Southern California, have a higher potential of expansive soils than areas with higher rainfall.

Based on the Web Soil Survey, the underlying soils for the project site are Bolsa silt loam and Bolsa silt loam (drained) (USDA 2025). Bolsa soils are considered deep, somewhat poorly drained soils formed in mixed

alluvium, are in flood plains and basins, and are in areas with an annual precipitation of about 13 inches (USDA 1997). As a result of the Bolsa soils only being somewhat poorly drained and not containing high amounts of clay, the soils can hold moisture and are not subject to expansion.

The project will be designed in accordance with the requirements of the CBC and with DSA's review. A comprehensive geotechnical evaluation would be prepared, including development-specific subsurface exploration and laboratory testing, and its recommendations would be implemented as required. Therefore, impacts related to expansive soil would be less than significant, and no mitigation measures are necessary.

**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?**

**No Impact**. The proposed project does not propose the use of septic tanks or alternative wastewater disposal systems. The proposed project is in a developed neighborhood within an urban area of Huntington Beach and does not propose connection to city utilities. No impacts related to septic systems would occur.

**f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

**Less Than Significant Impact With Mitigation Incorporated.** The project site is entirely developed with a soccer field associated with Peterson ES. No unique geologic features exist on the project site. The proposed project would not directly nor indirectly destroy unique geologic features. No impact would occur with regard to unique geological features.

Paleontological resources or fossils are remains of ancient plants and animals that can provide scientifically significant information about the history of life on earth. This sensitivity is determined by rock type, history of the geologic unit in producing significant fossils, and fossil localities that are recorded from that unit. The University of California Museum of Paleontology lists 7,745 localities in Orange County (UCMP 2025). Approximately 5,050 of the localities are from the Pleistocene-Holocene Epoch, which is the age of the project site's underlying rock type (DOC 2025c).

The project site has been developed with a soccer field. The proposed project would include grading, utility trenching and installation of the athletic lights, requiring subsurface work during construction. The operational phase would not include any subsurface activities. While fossils are not expected to be discovered during project construction, it is possible that fossils could be discovered during grading activities. Unknown fossils encountered during excavation would have the potential to be unintentionally damaged. Implementation of Mitigation Measure GEO-1, which requires temporarily halting construction within 50 feet of any discovered fossil and notifying a qualified paleontologist to evaluate the find, would ensure that impacts to previously unknown paleontological resources are less than significant.

## Mitigation Measure

**GEO-1** In the event that fossils or fossil locality deposits are discovered during construction, excavations within 50-feet of the fossil locality shall be temporarily halted until removal of the fossil localities. The contractor shall notify a qualified paleontologist to investigate its significance. If the fossil locality is determined to be significant by the qualified paleontologist

the paleontologist shall work with the District to follow accepted professional standards such as further testing for evaluation or data recovery, as necessary. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important.

## 3.8 GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as greenhouse gases (GHG), into the atmosphere. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide ($CO_2$), methane ($CH_4$), and ozone ($O_3$)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide ($N_2O$), sulfur hexafluoride ($SF_6$), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[4]

Information on manufacturing of cement, steel, and other "life cycle" emissions that would occur as a result of the project are not applicable and are not included in the analysis.[5] Black carbon emissions are not included in the GHG analysis because the California Air Resources Board (CARB) does not include this pollutant in the state's Senate Bill 32 (SB 32) and Assembly Bill 1279 (AB 1279) inventory and treats this short-lived climate pollutant separately.[6] A background discussion on the GHG regulatory setting and GHG modeling can be found in Appendix A to this Initial Study.

Would the project:

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

**Less Than Significant Impact.** Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even

[4] Water vapor ($H_2O$) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

[5] Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analyses was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (CNRA 2018). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted (LCI 2008).

[6] Particulate matter emissions, which include black carbon, are analyzed in Section 3.3, Air Quality. Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The state's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within 10 years (CARB 2017).

a very large one, does not generate enough greenhouse gas emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact.

Implementation of the proposed project would result in replacement of the two existing soccer fields at Peterson ES with a new single soccer field and the installation and operation of three lighting poles for this new proposed field. The permanent lighting would provide additional lighting to extend the hours available for use of the field, which would generate an increase in mobile trips in the evening until 9:00 pm at the latest, similar to uses occurring during the summer months. However, because the proposed project would operate in the same manner as existing conditions, there would not be an increase in water demand, wastewater and solid waste generation, area sources (e.g., consumer cleaning products), or refrigerants.

Project-related construction and operation-phase GHG emissions are shown in Table 7, *Project-Related Operation GHG Emissions*. Annual average construction emissions from construction activities were amortized over 30 years and included in the emissions inventory to account for one-time GHG emissions from the construction phase of the proposed project. Overall, development and operation of the proposed project would not generate annual GHG emissions that exceed the South Coast AQMD Working Group bright-line threshold of 3,000 metric tons of carbon dioxide equivalent ($MTCO_2e$) per year for development projects (South Coast AQMD 2010). Therefore, the proposed project's cumulative contribution to GHG emissions would be less than significant.

**Table 7 Project-Related Operation GHG Emissions**

| Source | GHG Emissions ($MTCO_2e$/Year) | Percentage of Total Emissions |
|---|---|---|
| Field Lighting Energy[1] | <1 | 0% |
| Mobile[2] | 98 | 99% |
| Amortized Construction Emissions[3] | 1 | 1% |
| **Total** | **64** | **100%** |
| South Coast AQMD Bright-Line Threshold | 3,000 $MTCO_2e$/Yr | NA |
| **Exceeds Bright-Line Threshold?** | **No** | NA |

Source: CalEEMod, Version 2022.1.
Notes: $MTCO_2e$: metric ton of carbon dioxide equivalent.
1 Emissions from field lighting calculated off-model based on average hours of lighting per event (Appendix A).
2 Vehicle trips provided by DJ&A Traffic Impact Study (Appendix D).
3 Total construction emission are amortized over 30 years per South Coast AQMD Working Group methodology.

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

**Less Than Significant Impact.** Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan and the SCAG's RTP/SCS. A consistency analysis with these plans is presented below.

# 3. Environmental Analysis

## CARB Scoping Plan

CARB's latest Climate Change Scoping Plan (2022) outlines the State's strategies to reduce GHG emissions in accordance with the targets established under AB 32, SB 32, and AB 1279 (CARB 2022). The Scoping Plan is applicable to State agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Statewide strategies to reduce GHG emissions in the 2022 Climate Change Scoping Plan include: implementing SB 100, which expands the RPS to 60 percent by 2030; expanding the Low Carbon Fuel Standards (LCFS) to 18 percent by 2030; implementing the Mobile Source Strategy to deploy zero-electric vehicle buses and trucks; implementing the Sustainable Freight Action Plan; implementing the Short-Lived Climate Pollutant Reduction Strategy, which reduces methane and hydrofluorocarbons to 40 percent below 2013 levels by 2030 and black carbon emissions to 50 percent below 2013 levels by 2030; continuing to implement SB 375; creating a post-2020 Cap-and-Trade Program; and developing an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Statewide strategies to reduce GHG emissions include the low carbon fuel standards, California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the CAFE standards, and other early action measures as necessary to ensure the State is on target to achieve the GHG emissions reduction goals of AB 32, SB 32, and AB 1279. In addition, new developments are required to comply with the current Building Energy Efficiency Standards and CALGreen. The proposed project would comply with these GHG emissions reduction measures since they are statewide strategies. The proposed project GHG emissions would be further reduced from compliance with statewide measures that have been adopted since AB 32, SB 32, and AB 1279 were adopted. Therefore, the proposed project would not obstruct implementation of the 2022 Scoping Plan, and impacts would be less than significant.

## SCAG's Regional Transportation Plan/Sustainable Communities Strategy

SCAG adopted the 2024-2050 RTP/SCS, Connect SoCal, in April 2024. Connect SoCal is a long-term plan for Southern California region that details the development, integrated management and operation of transportation systems and facilities that will function as an intermodal transportation network for the SCAG metropolitan planning area (SCAG 2024). This plan outlines a forecast development pattern that demonstrates how the region can sustainably accommodate needed housing and job centers with multimodal mobility options. The overarching vision is to expand alternatives to driving, advance the transition to clean-transportation technologies, promote integrated and safe transit networks, and foster transit-oriented development in compact and mixed-use developments (SCAG 2024). In addition, Connect SoCal is supported by a combination of transportation and land use strategies that outline how the region can achieve California's GHG-emission-reduction goals and federal Clean Air Act requirements. The projected regional development, when integrated with the proposed regional transportation network in Connect SoCal, would reduce per-capita GHG emissions related to vehicular travel and achieve the GHG reduction per capita targets for the SCAG region.

The Connect SoCal Plan does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency to governments and developers. The proposed project would involve installation and operation of field lighting at a soccer field on the Peterson ES campus and would generate a minimal increase in vehicle trips during the evening from additional after-school activities at the soccer field. As determined in Section 3.17, the proposed project would result in less than significant impacts with respect to VMT. The proposed project would not change the underlying zoning or uses on the project site and would continue to serve the local student population and neighboring communities. Therefore, the proposed project would not interfere with SCAG's ability to implement the regional strategies in Connect SoCal, and impacts would be less than significant.

# 3.9 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

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

**Less Than Significant Impact.**

## Construction

Construction of the proposed project could require small amounts of hazardous materials during construction, such as vehicle fuels, lubricants, grease and transmission fluids, and paints and coatings. The handling, use, transport, and disposal of hazardous materials during the construction phase of the proposed project would comply with existing regulations of several agencies—the Environmental Protection Agency (EPA), California Division of Occupational Safety and Health, US Occupational Safety and Health Administration (OSHA), and US Department of Transportation (USDOT).

## Operation

Operation of the proposed project could transport, use, store, and dispose of small amounts of hazardous materials typical of school facilities, such as cleaning and maintenance supplies (cleaners, gasoline, paint and pesticides). The proposed project includes installation of field lighting poles, and field striping improvements that could require the use of cleaners and other chemicals in relatively small quantities, which is not typically considered hazardous materials that could result in a significant hazard to the public or the environment. No manufacturing, industrial, or other uses utilizing large amounts of hazardous materials would occur within the campus. The use, storage, transport, and disposal of hazardous materials during both construction and operational phases would be governed by existing regulations of several agencies, including the US Environmental Protection Agency, US Department of Transportation, California Division of Occupational Safety and Health, Orange County Health Care Agency, Environmental Health Division, and the Huntington Beach Fire Department (HBFD) similar to the construction phase. Compliance with applicable laws and regulations governing the use, storage, transportation, and disposal of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the potential for safety impacts.

# 3. Environmental Analysis

Therefore, substantial hazards to the public or the environment arising from the routine use, storage, transport, and disposal of hazardous materials would be less than significant, and no mitigation measures are necessary.

**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?**

**Less Than Significant Impact.** The project site is currently developed with the existing Peterson ES soccer field. Five environmental lists were searched for hazardous materials site on the project site:

- **GeoTracker.** State Water Resources Control Board (SWRCB 2025)
- **EnviroStor.** Department of Toxic Substances Control (DTSC 2025)
- **EnviroMapper.** United States Environmental Protection Agency (USEPA 2025a)
- **Solid Waste Information System (SWIS).** California Department of Resources Recovery and Recycling (Cal Recycle 2025)
- **Cortese List.** Department of Toxic Substances Control (DTSC 2025b)

The results from the five environmental lists that were searched can be found Table 8, *Hazardous Waste Sites within 0.25 mile*.

**Table 8 Hazardous Waste Sites within 0.25 mile**

| Site Address | Database | Identifier | Cleanup Status | Proximity to Site |
|---|---|---|---|---|
| 8112 Indianapolis Avenue Huntington Beach, CA 92646 | EnviroMapper | N/a | Inactive (expired: 1/25/2019) (CAC002986633) | 0.5 miles north |
| 833 Frankfort Avenue Huntington Beach, CA 92646 | EnviroMapper | Asbestos | Inactive (expired: 9/24/2018) (CAC002968063) | 0.19 miles west |
| 8261 Indianapolis Avenue Huntington Beach, CA 92646 | EnviroMapper | Asbestos | Inactive (expired: 10/11/2018) (CAC002970663) | 0.17 miles northeast |
| 20631 Egret Lane Huntington Beach, CA 92646 | EnviroMapper | Asbestos | Inactive (expired: 5/16/2019) (CAC003001163) | 0.20 miles southeast |
| 8241 Munster Drive Huntington Beach, CA 92646 | EnviroMapper | Non-RCRA Hazardous Waste Liquid (Polymer) | Inactive (expired: 9/17/2019) (CAC003020212) | 0.22 miles northeast |
| 20363 Beach Boulevard Huntington Beach, CA 92648 | EnviroMapper | Waste Tetrachloroethylene; Non-RCRA Hazardous Waste (Petroleum) | Active (CAL000225287) | 0.24 miles northwest |
| | | Halogenated solvents | Inactive (expired: 6/30/1995) (CAD983588765) | |

Source: SWRCB 2024; USEPA 2024b; DTSC 2024a.

Based on the following five databases, there is no evidence that a hazardous materials release or threatened release have occurred on the project site. A total of six hazardous waste sites have been identified within 0.25 miles of the project site; see Table 8.

Five of the cases are identified as inactive and therefore will not be affected by the proposed project. The active hazardous waste site at 20363 Beach Boulevard is a cleaner's business. The site has a permanent ID to dispose of hazardous waste utilized during operational activities. The active site disposes of hazardous waste in accordance with state and federal policy; thus the proposed project will not affect this listing. The project site and its surroundings are not identified in any of the other databases and are not identified as hazardous materials sites; see Table 8. Therefore, the project site would not create a significant hazard to the public or the environment, and no impact would occur.

As discussed previously in Section 3.9(a), construction activities could require small amounts of hazardous materials, including vehicle fuels, lubricants, grease and transmission fluids as well as paints and coatings. The use, transportation, and disposal of hazardous materials would be in accordance with regulatory standards and manufacturers' specifications. Hazardous materials could be used in small quantities and stored so they do not pose significant safety hazards. Operation of the proposed project could transport, use, store, and dispose of small amounts of hazardous materials typical of school facilities such as cleaning and maintenance supplies (e.g., cleaners, gasoline, paint, pesticides). Operation of the proposed project could use cleaners and other chemicals in relatively small quantities, which is not typically considered hazardous materials that could result in a significant hazard to the public or the environment. Compliance with applicable federal, local, regional, and state laws and regulations governing the use, storage, transport, and disposal of hazardous materials would ensure impacts would be less than significant.

**c) 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 site is located on the northwestern portion of Peterson ES campus. The next closest school site is the Moffett Elementary School at 8800 Burlcrest Drive, approximately 0.70 mile northwest of the project site. As discussed in Section 3.9(a), construction and operation of the proposed project could handle small amounts of hazardous materials typical of construction activities and scholastic athletic activities (during operation). The use, transportation, and storage of hazardous materials would be required to comply with all applicable federal, local, regional, and state regulations, which would ensure the proper handling of such materials. As discussed in Section 3.9(b), there is no evidence that a hazardous materials release or threatened release have occurred on the project site or within a quarter-mile radius of the project site. The proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. Thus, impacts would be less than significant.

**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.** Five environmental lists were searched for hazardous materials site on the project site:

- **GeoTracker.** State Water Resources Control Board (SWRCB 2025)
- **EnviroStor.** Department of Toxic Substances Control (DTSC 2025)

- **EnviroMapper.** United States Environmental Protection Agency (USEPA 2025a)
- **Solid Waste Information System (SWIS).** California Department of Resources Recovery and Recycling (Cal Recycle 2025)
- **Cortese List.** Department of Toxic Substances Control (DTSC 2025b)

As discussed in Section 3.9(b), there is no evidence that a hazardous materials release or threatened release have occurred on the project site. Therefore, the proposed project would not create a hazard to the public because of a hazardous materials site compiled pursuant to Government Code Section 65962.5. Impact would be less than significant.

**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?**

**No Impact.** The closest public airport to the project site is John Wayne Airport, approximately 6.4 miles northwest of the project site. The project site is not within two miles of a public airport or public use airport. No impact would occur.

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

**Less Than Significant Impact.** In 2023, the City of Huntington Beach updated the existing Emergency Operations Plan (EOP), which is a comprehensive emergency management plan that addresses the planned response to extraordinary emergencies associated with natural disasters, human-caused incidents, and homeland security emergencies in or affecting the City of Huntington Beach. Because the project site is in the City of Huntington Beach, the EOP applies to the proposed project. However, the EOP does not identify any designated evacuation routes (Huntington Beach 2023).

In addition to the EOP, the City approved the Local Hazard Mitigation Plan (LHMP) on December 20, 2022. The LHMP evaluates local natural and human-caused hazards, outlines strategies to reduce risk, and supports informed decision-making and coordination among the City and stakeholders. Unlike the EOP, the LHMP does identify specific evacuation routes in the City. In the event of a large-scale evacuation, I-405 and SR-1 would serve as evacuation routes. While not directly accessible to the City, a number of nearby freeways such as I-605, SR-22, SR-55, and SR-73 can serve as evacuation routes. The City also includes multiple surface routes that may also be used as evacuation routes. These include major north-south surface streets such as Springdale Street, Goldenwest Street, Beach Boulevard, Newland Street, and Magnolia Street. Key east-west routes in the City are Edinger Avenue, Heil Avenue, Warner Avenue, Adams Avenue, and Hamilton Avenue (Huntington Beach 2022).

The project site and surrounding area are in a tsunami hazard zone and evacuation area as identified by the Huntington Beach General Plan. The Huntington Beach General Plan also identifies evacuation routes in the event of a tsunami. The nearest evacuation route to the project site in the event of a tsunami is Beach Boulevard

which is approximately 0.1 miles northwest of the project site. According to the Huntington Beach General Plan, evacuees in the event of a tsunami would travel north on Beach Boulevard to I-405, which is one of the main evacuation routes out of the City (Huntington Beach 2017b).

Other evacuation routes surrounding the project site include Newland Street, which is 0.34 mile east of the project site and can be accessed from the project site via Indianapolis Avenue to the north and Atlanta Avenue to the south (Huntington Beach 2022).

As discussed in Section 1.3, *Project Description*, the proposed project would not include any off-site improvements. Additionally, the proposed project would not include any off-site staging, and the proposed project would be constructed entirely within the project site. Construction of the proposed project would not require road closures or otherwise interfere with any City-designated evacuation routes.

Additionally, during after-school hours, including YMCA and AYSO events, the existing campus parking lot, which provides 64 spaces, would provide enough off-street parking spaces for participants and spectators and would not interfere with any existing evacuation routes. Larger events, such the Spring Fling and Fall Festival, would only occur twice a year at designated times and would not permanently interfere with any City-designated evacuation routes. Therefore, impacts related to emergency access and evacuation routes would be less than significant.

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

**Less Than Significant Impact.** As discussed in Section 3.20, *Wildfire*, the project site is in a local responsibility area and is not in a very high fire hazard severity zone (VHFHSZ). The purpose of the proposed project is to support existing Peterson ES students, staff, and community. The project site is generally flat, with a gradual downward slope from the north to the south. The project site and the surrounding area are developed with the Peterson ES campus and residential uses. The proposed structures are typical of a soccer field.

Structures on-site would be reviewed and approved by DSA. As further discussed in Section 3.15, *Public Services*, the proposed project would be adequately served by the Huntington Beach Fire Department. Fire suppression equipment specific to construction would be maintained on-site. Additionally, project construction would comply with applicable existing codes and ordinances related to the maintenance of mechanical equipment, handling and storage of flammable materials, and cleanup of spills of flammable materials. The proposed project includes the installation of field lighting at the soccer field and would not change the uses or boundaries of the facilities to place students or members of the public closer to wildland fires. Therefore, the proposed project would not expose people or structures to a significant risk due to wildfires. Impacts would be less than significant.

# 3.10 HYDROLOGY AND WATER QUALITY

Would the project:

**a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?**

**Less Than Significant Impact.** Urban runoff from storms or nuisance flows (runoff during dry periods) from development projects can carry pollutants to receiving waters. Runoff can contain pollutants such as oil, fertilizers, pesticides, trash, and sediment. This runoff can flow directly into local streams or into storm drains and continue through stormwater pipes until it is released untreated into a local waterway and eventually the ocean. Untreated stormwater runoff degrades water quality in surface waters and groundwater and can affect drinking water, human health, and plant and animal habitats. The construction and operational phases of the proposed project have the potential to impact water quality. The following is a discussion of the potential impacts that the construction and operational phases of the proposed project could have on water resources and quality.

## Construction

Grading, excavation, and construction activities associated with the proposed project may impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff. Additionally, the use of construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Finally, the refueling and parking of construction vehicles and other equipment on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

The proposed project consists of the installation of three new field lighting poles around the existing soccer field. The proposed project would also consist of trenching for the installation of an electrical line to provide electricity for the three field lighting poles, and is anticipated to disturb approximately 3,000 square feet. Additionally, the proposed project is anticipated to include expansion of hardscaping, which would be limited to the installation of the field lighting poles. The proposed project is not required to prepare a Stormwater Pollution Prevention Plan (SWPPP) because the total area of disturbance is approximately 3,000 square feet, which is well below the one-acre threshold that triggers SWPPP requirements. However, BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction would be incorporated. These include, but are not limited to:

- Erosion controls (e.g., earth dikes and swales, mulching, slope drains, compost blankets)
- Sediment controls (e.g., silt fence, sediment trap, sandbag or straw bale barriers)
- Tracking controls (e.g., stabilized construction entrance/exit, tire wash)
- Non-storm water management (e.g., dewatering practices, vehicle and equipment cleaning)
- Materials and waste management (e.g., material storage, hazardous waste management, soil management)
- Good housekeeping practices.

Implementation of BMPs throughout the construction phase of the proposed project will address anticipated and expected pollutants of concern due to construction activities. The proposed project would comply with all applicable water quality standards and waste discharge requirements. Therefore, the construction of the proposed project would not violate water quality standards or waste discharge requirements and would not otherwise substantially degrade water quality, resulting in less-than-significant impact.

### Operation

Once the proposed project has been constructed, urban runoff could include a variety of contaminants that are typical of the operation of school athletic facilities (see Section 3.9, *Hazards and Hazardous Materials*). As discussed previously, the proposed project would be required to comply with applicable federal, local, regional, and state codes and requirements governing the use, storage, transport, and disposal of hazardous materials would ensure impacts would be less than significant. Implementation of the proposed project would not substantially increase the amount of impervious surfaces on the project site. Therefore, operational impacts related to runoff would remain similar to existing conditions on-site. With compliance with federal, local, regional, and state regulations and code requirements, the proposed project would have a less than significant impact on surface or groundwater quality during the operational phase. Therefore, this impact is less than significant.

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

**Less Than Significant Impact.** The project site is located within the Coastal Plain of Orange County Groundwater Basin (CDWR 2025a). Although the Coastal Plain of Orange County Groundwater Basin (OC Basin) is a medium priority basin and is managed by the Orange County Water District (OCWD), the basin is not a critically overdraft groundwater basin (CDWR 2025b). The City relies on groundwater from the OC Basin to meet the City's water demands (Huntington Beach 2020). The OC Basin is recharged by recycled water, stormwater that flows into the Santa Ana River, recharge basins, and surface water flows (CDWR 2004).

The project site includes developed and disturbed lands with the existing campus soccer fields. There are no existing impervious surfaces on the project site. The proposed project would result in a slight increase in impervious surfaces compared to existing conditions with the installation of the field lights. The project does not propose groundwater wells that would extract groundwater from the aquifer, nor would the proposed project affect recharge capabilities for the basin, as the site not used for groundwater recharge activities, nor does it represent a source of groundwater recharge is or extraction. Therefore, the proposed project would not substantially interfere with groundwater supplies or recharge. Impacts to groundwater supplies would be less than significant.

**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?**

**Less Than Significant Impact**. Erosion and siltation impacts that could result from alteration of drainage patterns would, for the most part, occur during the proposed project's construction phase, which would include site preparation and grading activities. Environmental factors that affect erosion include topography, soil type, wind, and rainfall. Siltation is associated with sediment transport and deposition in waterways. The proposed project would not involve the alteration of any natural drainage channels or any watercourse, since none exist onsite. The proposed project would result in a slight increase of impervious surfaces compared to existing conditions. However, the increase in impervious surfaces would be negligible. Implementation of the project BMPs, as discussed in Impact 3.10(a), during the construction phase and operational phase would Therefore, erosion and siltation impacts would be less than significant.

**ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?**

**Less Than Significant Impact.** The project site is developed with the existing Peterson ES campus. The proposed project would not involve the alteration of any natural drainage or watercourse, as none exist on-site. The proposed project would not substantially alter the existing drainage of the project site. Although the proposed project would result in a slight increase of impervious surfaces on the project site, implementation of site BMPs would control the amount and quality of the stormwater, leaving the project site as discussed in Impact 3.10(a). Thus, the proposed project would not substantially increase the rate or amount of surface runoff in a manner that would cause flooding.

The proposed project would not substantially increase the rate or amount of surface runoff in a manner that would cause flooding on or off-site. Therefore, impacts related to stormwater drainage and flooding would be less than significant.

**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?**

**Less Than Significant Impact.** The project site is developed with soccer fields. The proposed project would result in a slight increase of impervious surfaces compared to existing conditions. The increase in impervious surfaces would be considered negligible, and stormwater from the proposed project would percolate in the ground or directed to the storm drains along Farnsworth Lane and on campus. Therefore, the proposed project would generate stormwater similar to existing conditions. As discussed in Impact 3.10(a), construction and operation of the proposed project would implement BMPs that would control the amount and quality of stormwater leaving the project site.

Construction and operation of the proposed project would use small quantities of hazardous materials, such as oil, solvents, paint, and gasoline during construction (among other materials) and chemicals used

for cleaning and maintenance and paints during operation (among other materials). All potentially hazardous materials used on-site are typical of construction activities and of educational uses. All potentially hazardous materials would be properly handled, stored, used and disposed of and would not represent a substantial source of pollution.

The proposed project would not exceed the capacity of existing stormwater drainage systems and would not create substantial additional sources of polluted runoff. Impacts would be less than significant

**iv) Impede or redirect flood flows?**

**Less Than Significant Impact.** The project site is partially within Federal Emergency Management Act (FEMA) Flood Zone Designation of X, an area with reduced flood risk due to levee. The proposed project would install the field lighting poles at the soccer field in Flood Zone X (FEMA 2025). The proposed project would be designed and constructed to be consistent with CBC and other Title 24 building requirements. The proposed project would not substantially alter the drainage of the project site by impeding or redirecting flood flows.

According to the California Department of Water Resources' Dam Breach Inundation Map the campus is not within an inundation area (CDWR 2025c). Construction of the proposed project would not impede or redirect flood flows. With adherence to the CBC and federal, State, and local policies, the proposed project would not substantially alter the drainage of the project site, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows. Impacts would be less than significant.

**d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?**

**Less Than Significant Impact.** As stated in Section 3.10(c)(iv), the project site is in a FEMA Flood Zone. However, with adherence to CBC, the proposed project would not substantially alter the drainage of the project site by impeding or redirecting flood flows.

A tsunami is a series of ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. As stated in Impact 3.9(f), the project site and surrounding area are in a tsunami hazard zone and evacuation area identified by the Huntington Beach General Plan (Huntington Beach 2017b). However, the proposed project would serve, into the evening hours, campus and recreational activities that already occur on campus, similar to uses occurring during the summer months. Although the proposed project is expected to use small amounts of hazardous materials during construction and operation (e.g., paints, cleaners, oils, etc.), the construction and operation of the proposed project would be required to comply with applicable regulations for proper handling, usage, and storage of potentially hazardous materials (see Section 3.9, *Hazards and Hazardous Materials*). Additionally, due to adherence with State and local policies and DSA review, the proposed project would not release pollutants in the event of a tsunami. Therefore, a less than significant impact would occur.

A seiche is a surface wave created when a body of water is shaken, usually by earthquake activity. Seiches are of concern relative to water storage facilities because inundation from a seiche can occur if the wave overflows

a containment wall, such as the wall of a reservoir, water storage tank, dam or other artificial body of water. Although there are no large water tanks in the area that could impact the proposed project site, there are dams in the region that could create flooding impacts. As discussed in section 3.10 (c)(iv), the project site is not within an inundation area. Therefore, a less than significant impact would occur.

**e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?**

**Less Than Significant Impact.** As previously mentioned in Impact 3.10(b), the proposed project would not substantially interfere with groundwater supplies or recharge and would not obstruct implementation of a sustainable groundwater management plan. The proposed project would be required to submit construction drawings to DSA for approval and would comply with existing local, regional, and State regulations. The proposed project would not obstruct implementation of a water quality control plan. Therefore, this impact is less than significant.

## 3.11 LAND USE AND PLANNING

Would the project:

**a) Physically divide an established community?**

**No Impact.** The project site is located within the City of Huntington Beach and is surrounded by fully developed residential land uses. The project site would be located in the northwestern portion of the existing Peterson ES campus. The proposed improvements would be limited to the project site. The proposed project would not change any existing driveways leading to the campus. The proposed project would not create any new land use barriers or divide or disrupt the physical arrangement of any surrounding communities. No impact would occur.

**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?**

**No Impact.** The project site is zoned Public/Semipublic and has a General Plan Land Use designation of Public/Semipublic. The Public/Semipublic allows for schools, public or private defined as educational institutions having a curriculum comparable to that required in the public schools of the State of California. The proposed project would implement new field lighting on an existing soccer fields on the Peterson ES campus. The proposed project would be consistent with the existing school and athletic uses at the Peterson ES campus. The proposed project would not alter or modify the project site's current land use and zoning designations. Development of the proposed project would not conflict with any applicable land use plans, policies, or regulations. Therefore, there no impact would occur.

# 3.12 MINERAL RESOURCES

Would the project:

**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?**

**No Impact.** In 1975, the State legislature adopted the Surface Mining and Reclamation Act (SMARA). The Mineral Resources Zones were designated as statewide or regional importance. The classifications used to define MRZs are:

- **MRZ-1.** Areas where the available geologic information indicates no significant mineral deposits or a minimal likelihood of significant mineral deposits.
- **MRZ-2.** Areas where the available geologic information indicates that there are significant mineral deposits or that there is a likelihood of significant mineral deposits.
- **MRZ-3.** Areas where the available geologic information indicates that mineral deposits are likely to exist; however, the significance of the deposit is undetermined.
- **MRZ-4.** Areas where there is not enough information available to determine the presence or absence of mineral deposits.

According to the California Department of Conservation's (DOC) Mineral Land Classification Map and Huntington Beach General Plan Environmental Resources and Conservation Element, the project site is within a mineral zone classified as MRZ-3. There are indications that mineral deposits may exist on the project site, but the significance of the deposits is undetermined (DOC 2025b; Huntington Beach 2017b). The project site is on the Peterson ES campus and operates as an elementary school. The campus and project site are in an urbanized area, and no mineral extraction exists on-site nor in the immediate project vicinity. Since no mineral extraction activities occur on-site and the proposed project is consistent with the existing use on-site, the proposed project would not 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. Therefore, less than significant impacts would occur.

**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?**

**Less Than Significant Impact.** The Huntington Beach General Plan Environmental Resources and Conservation Element identifies three mineral resource classifications in the city (MRZ-1, MRZ-2, and MRZ-3). The General Plan identifies peat as a known resource in the city limits, but this resource was produced in the area from 1941 and 1954 and is no longer produced or mined (Huntington Beach 2017b). As discussed in Section 3.11(a), above, the project site is on the Peterson ES campus and supports elementary school uses. The campus and project site are in an urbanized area, and no mineral extraction exists on-site nor in the immediate project vicinity. The proposed project does not include uses that could 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. Therefore, impacts related to the potential loss of availability of a locally recognized mineral resource would be less than significant.

# 3.13 NOISE

## Environmental Setting

Noise is defined as unwanted sound and, when overexposed, is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, federal, state, and local governments have established criteria to protect public health and safety and to prevent the disruption of certain human activities, such as classroom instruction, communication, or sleep. Noise modeling was prepared by PlaceWorks in July 2025, which is summarized herein and included as Appendix C to this IS/MND. Additional information on noise and vibration fundamentals and applicable regulations are in Appendix C.

## Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration. These uses include residences, hospitals, convalescent and day care facilities, schools, and libraries where quiet environments are necessary for the enjoyment, public health, and safety of the community. The nearest sensitive receptors to the project site are residential uses to the north. Residential uses surround the Peterson Elementary School to the north, east, south, and west.

## Ambient Noise Monitoring

### *Short Term*

Three locations for short-term (15-minute) measurements were selected, and measurements were taken around the Peterson Elementary School's multi-use play fields (project site). All measurements were taken Wednesday, March 19, 2025, in the evening after school hours.

The short-term sound level meter used (Larson Davis LxT) for noise monitoring satisfies the American National Standards Institute (ANSI) standard for Type 1 instrumentation.[7] The short-term sound level meter was set to "slow" response and "A" weighting (dBA). The meter was calibrated prior to and after each monitoring period. All measurements were at least 5 feet above the ground and away from reflective surfaces. Short-term measurement locations are described below and shown on Figure 16, *Approximate Noise Monitoring Locations*, and results are summarized in Table 9, *Short-Term Noise Measurements Summary in A-Weighted Sound.*

- **Short-Term Location 1 (ST-1)** was in the rear alley/access road of the residences at 8112 and 8122 Indianapolis Avenue. The sound level meter was approximately 62 meters east of an existing drainage channel west of the project site and 5 meters north of the project site. A 15-minute noise measurement began at 5:34 pm. The noise environment for this location is characterized by the soccer games/practices at Peterson Elementary on Farnsworth Lane, and distant vehicle traffic from Indianapolis Avenue and

[7] Monitoring of ambient noise was performed using Larson-Davis model LxT sound level meters.

Beach Boulevard (SR-39). A car drove by the alley at 5:35 Pm. Noise levels measured 55.2 dBA $L_{eq}$ and 72.5 dBA $L_{max}$ during the measurement period at ST-1.

- **Short-Term Location 2 (ST-2)** was at the end of the Driftwood Drive cul-de-sac between the residences at 8071 and 8072 Driftwood Drive, approximately 36 meters west of the project site on the opposite side of the existing drainage channel. A 15-minute noise measurement began at 5:55 pm. The noise environment for this measurement location is characterized primarily by vehicle traffic from Indianapolis Avenue and Beach Boulevard (SR-39) and work at nearby residencies (i.e., drilling and hammering). A small plane flew overheard at 6:00 pm. Noise levels measured 53.9 dBA $L_{eq}$ and 63.7 dBA $L_{max}$ during the measurement period at ST-2.

- **Short-Term Location 3 (ST-3)** was at the northwestern corner of Reilly Drive and Farnsworth Lane, at the corner of the residence at 8231 Reilly Drive. A 15-minute noise measurement began at 4:53 pm. The noise environment at this measurement location is characterized primarily by infrequent vehicle traffic in the parking lot for the after-school soccer games/practices and e-bikes driving by. Noise levels measured 56.8 dBA $L_{eq}$ and 68.0 dBA $L_{max}$ during the measurement period at ST-3.

**Table 9 Short-Term Noise Measurements Summary in A-Weighted Sound**

| Monitoring Location | Description | 15-Minute Noise Level (dBA) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | $L_{eq}$ | $L_{max}$ | $L_{min}$ | $L_{50}$ | $L_{25}$ | $L_8$ | $L_2$ |
| ST-1 | Rear alley/access road for the residences of 8132 and 8122 Indianapolis Avenue 5/19/24, 5:34 PM | 55.2 | 72.5 | 48.6 | 53.3 | 55.0 | 57.2 | 60.1 |
| ST-2 | Cul-de-sac of Driftwood Drive 5/19/24, 5:55 PM | 53.9 | 63.7 | 47.3 | 52.1 | 54.6 | 56.9 | 60.4 |
| ST-3 | At the residence at 8231 at the corner of Reilly Drive and Farnsworth Lane 5/19/25, 4:53 PM | 56.8 | 68.0 | 48.1 | 53.6 | 57.2 | 61.3 | 64.4 |

Source: Appendix C.

## Applicable Standards

### *Local Noise Regulations*

#### *City of Huntington Beach Municipal Code*

City of Huntington Beach Municipal Code Chapter 8.40, Noise Control, provides noise standards for residential properties. Table 10, *Exterior Noise Standards*, summarizes allowable exterior noise levels at the receiving property lines of residences. It is unlawful for any person at any location within the incorporated area of the City to create any noise due to a fixed noise source (or any mobile source not preempted by state or federal laws), or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured at the property line of any residential, hotel, motel, public institutional, recreational, or commercial property, either within or outside the City, to exceed the applicable noise standards.

# 3. Environmental Analysis

**Table 10 Exterior Noise Standards**

| Land Use | Leq Noise Level dBA | Lmax Noise Level dBA | Time Period |
|---|---|---|---|
| Low-Density Residential | 55 | 75 | 7 am–10 pm |
| | 50 | 70 | 10 pm–7 am |

Source: Huntington Beach Municipal Code, Chapter 8.40.
Notes: In the event the alleged offensive noise consists entirely of impact or impulsive noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five dBA.
In the event the measured ambient noise level exceeds any of the noise limit categories above, the noise limit shall be increased to reflect said ambient noise level.
In the event that the noise source and the affected property are within different land use categories, the noise standards of the affected property shall apply.

The following activities shall be exempt from the provisions of Chapter 8.40 of the City of Huntington Beach Municipal Code (Section 8.40.090, Special Provisions):

- School bands, school athletics and school entertainment events, provided such events are conducted on school property **or** authorized by special permit from the City.
- Activities lawfully permitted in public parks, public playgrounds and public or private school grounds.
- Noise sources associated with construction, repair, remodeling, or grading of any real property, provided that: (1) the City has issued a building, grading or similar permit for such activities[8]; (2) said activities do not take place between the hours of 7:00 pm and 7:00 am, Monday through Saturday, or at any time on Sunday or a Federal holiday; and (3) the average construction noise levels do not exceed 80 dBA $L_{eq}$ at nearby noise-sensitive land uses. If outdoor construction activities are permitted by the City after 7:00 pm or before 7:00 am, the average construction noise levels at nearby noise-sensitive land uses shall be limited to 50 dBA $L_{eq}$.

Section 8.40.113, Vibration, of the municipal code provides vibration standards. It is unlawful for any person to create, maintain or cause any operational ground vibration on any property which exceeds 72 (VdB) at nearby vibration-sensitive land uses. The vibration limit at vibration-sensitive uses with high sensitivity such as operations conducting medical research and imaging shall be 65 VdB.

Would the project result in:

**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?**

**Less Than Significant Impact.**

[8] School construction is permitted by DSA; however, construction activities must comply with the City's municipal noise ordinance. Because the noise ordinance is separate from the City's Zoning Code, compliance is required, but no zoning permit is needed.

## Figure 16 - Approximate Noise Monitoring Locations




*Source: Nearmap 2025.*

# 3. Environmental Analysis

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## Construction Noise

Two types of short-term noise impacts could occur during construction: (1) mobile-source noise from transport of workers, material deliveries, and debris and soil haul and (2) stationary-source noise from use of construction equipment.

### *Construction Equipment*

Noise generated by on-site construction equipment is based on the type of equipment used, its location relative to sensitive receptors, and the timing and duration of noise-generating activities. Each stage of construction involves different kinds of equipment and has distinct noise characteristics. Noise levels from construction activities are typically dominated by the loudest equipment. The dominant equipment noise source is typically the engine, although work-piece noise (such as dropping of materials) can also be noticeable.

The noise produced at each construction stage is determined by combining the $L_{eq}$ contributions from each piece of equipment used at a given time, while accounting for the ongoing time-variations of noise emissions. Heavy equipment, such as a dozer or a loader, can have maximum, short-duration noise levels of up to 85 dBA $L_{max}$ at 50 feet. However, overall noise emissions vary considerably, depending on the specific activity performed at any given moment. Noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase would result in different noise levels from construction activities at a given receptor. Since noise from construction equipment is intermittent and diminishes at a rate of at least 6 dBA per doubling of distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and shielding effects), the average noise levels at noise-sensitive receptors could vary considerably, because mobile construction equipment would move around the site with different loads and power requirements.

Average noise levels from project-related construction activities are calculated by modeling the three loudest pieces of equipment per activity phase. Construction equipment is modeled at spatially averaged distances (i.e., from the acoustical center of the general construction site to the property line of the nearest receptors) because the area around the center of construction activities best represents the potential average construction-related noise levels at the various sensitive receptors for mobile equipment. Construction equipment for field lighting is modeled from where the proposed field lighting would be located to the nearest sensitive receptors.

The project's expected construction equipment mix was categorized by construction activity using the FHWA Roadway Construction Noise Model (RCNM). The associated, aggregate sound levels—grouped by construction activity—are summarized in Table 11, *Project-Related Construction Noise, dBA Leq*. RCNM modeling input and output worksheets are included in Appendix C. As shown in Table 11, on-site construction-related noise levels would not exceed the 80 dBA $L_{eq}$ threshold at the nearest noise sensitive residential receptors to the north, south, east, and west of the project site. Additionally, construction of the proposed project would occur during the exempt hours per the City of Huntington Beach Municipal Code Section 8.40.090. Therefore, construction noise impacts would be less than significant.

# 3. Environmental Analysis

**Table 11 Project-Related Construction Noise, dBA Leq**

| Construction Activity Phase | RCNM Reference Noise Level | Receptors to the North[1] | Receptors to the East | Receptors to the South | Receptors to the West[1] |
|---|---|---|---|---|---|
| *Distance in feet* | *50* | *180* | *600* | *800* | *240* |
| Site Prep | 80 | 66 | 58 | 56 | 63 |
| *Distance in feet* | 50 | 30 | 425 | 740 | 95 |
| Light Pole Installation | *73* | *74* | *54* | *50* | *64* |
| Paving | 77 | 78 | 58 | 54 | 68 |
| *Distance in feet* | *50* | *30* | *420* | *740* | *95* |
| Utility Trenching | 77 | 78 | 59 | 54 | 68 |
| **Maximum dBA $L_{eq}$** | | **78** | **59** | **56** | **68** |
| **Exceed 80 $L_{eq}$ dBA Threshold?** | | **No** | **No** | **No** | **No** |

Notes: Calculations performed with the FHWA RCNM software are included in Appendix C.
[1] Assumes -3 dBA for existing residential noise walls.

## On Campus Receptors

Students may remain on campus during site preparation and construction. Construction activities would occur within 75 feet of existing classroom buildings. At 75 feet, construction noise levels would range between 58 dBA and 76 dBA $L_{eq}$ at the nearest classrooms per the RCNM noise model. Typical exterior-to-interior noise attenuation with windows and doors closed is 25 dBA. This would result in interior noise levels of approximately 33 dBA to 51 dBA $L_{eq}$. Speech interference is considered intolerable when background noise levels exceed 60 dBA. Therefore, average construction noise levels would be 51 dBA $L_{eq}$ or lower in adjacent classrooms based on typical exterior-to-interior noise attenuation. To avoid classroom disruptions, some work would be done during instruction breaks when students are off campus. Additionally, construction of the proposed project would occur during the exempt hours per the City of Huntington Beach Municipal Code Section 8.40.090. Therefore, on-campus noise impacts would be less than significant.

## Operational Noise

### *Mobile Noise*

A project will normally have a significant effect on the environment related to traffic noise if it substantially increases the ambient noise levels for adjoining areas. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions, and changes of 1 to 3 dBA under quiet, controlled conditions. Changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is readily discernible to most people in an outdoor environment. Noise levels above 65 dBA Community Noise Equivalent Level (CNEL) are normally unacceptable at sensitive receptor locations such as residences, and noise environments in these areas would be considered degraded. Based on this, a significant impact would occur if the following traffic noise increases occur relative to the existing noise environment:

- 1.5 dBA in ambient noise environments of 65 dBA CNEL and higher
- 3 dBA in ambient noise environments of 60 to 64 dBA CNEL
- 5 dBA in ambient noise environments of less than 60 dBA CNEL

For this analysis, a significant traffic noise impact occurs when the thresholds above are exceeded under cumulative conditions (with project) and the contribution of the project to future traffic calculated to be 3 dBA CNEL based on existing modeled traffic noise levels.

With implementation of the proposed project, evening traffic during campus sports field events held in the winter months would increase. Traffic volume data for new trips associated with the project are provided by DJ&A (Appendix D). The proposed project is expected to generate a net daily increase of up to 71 trips to existing average daily trips. The data provided by the traffic engineer present the street and locations with scenarios for existing, opening year no project, and opening year with project conditions. Table 12, *Project-Related Increases in Traffic Noise, dBA CNEL at 50 Feet*, shows that the addition of trips due to the proposed project would result in an increase of 0.2 dBA or less over existing conditions. Therefore, the proposed project would not result in a 3 dBA increase, and impacts would be less than significant.

**Table 12 Project-Related Increases in Traffic Noise at 50 Feet**

| | | Segment | | Scenario | | | |
|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Existing | Opening Year No Project | Opening Year With Project | Increases |
| 1 | Indianapolis Avenue | Beach Boulevard | Farnsworth Lane | 64 | 64 | 64 | 0.1 |
| 2 | Indianapolis Avenue | Kilkenny Lane | Newland Street | 64 | 64 | 64 | 0.1 |
| 3 | Farnsworth Lane | Indianapolis Avenue | To the South | 55 | 56 | 56 | 0.2 |

Source: DJ&A 2025; Appendix C.

### *Soccer Field Noise*

The District is proposing to add sports lighting and one soccer field to the northwestern portion of the existing sports field at the Peterson Elementary School. The field lighting would consist of three light poles with pre-cast concrete bases. Similar to the existing uses on the existing soccer field, the proposed soccer field would continue to be utilized by the Peterson ES students, the Peterson ES PTA, YMCA program, and AYSO players, coaches, and spectators. Installation of the field lighting poles would allow for evening uses for various after-school events by the Peterson ES PTA, YMCA program, and AYSO, similar to uses occurring during the summer months. The Peterson ES PTA and YMCA program events would utilize the proposed field lighting. The Peterson ES PTA Fall Festival event would occur from 3:00 pm to 7:30 pm, and the Spring Fling event would occur from 3:00 pm to 7:30 pm. The YMCA program would utilize the field from the end of the school day to 6:00 pm on Monday through Friday. The AYSO events, similar to the current AYSO schedule of field use games/practices, would extend into the evening during the winter months from approximately 4:00 pm to 8:30 pm on the weekdays, similar to uses occurring during the summer months. Saturday uses for AYSO would not use the proposed field lighting but would continue to use the proposed soccer field for games and practices with similar attendance during the day between the hours of 8:30 am to 5:00 pm.

The District would have authority over the use of lights for games/practices and events based on specific needs; thus, the event schedule may be adjusted for different school and community events.

# 3. Environmental Analysis

The City of Huntington Beach Municipal Code Chapter 8.40 contains noise standards to protect noise-sensitive land uses. According to Section 8.40.90, "activities otherwise lawfully conducted in public parks, public playgrounds and public or private school grounds" are exempt from the City's noise standards. Therefore, for the purposes of defining a significant noise impact under CEQA, the periodic increase in ambient noise levels with the games above existing conditions would typically be used (e.g., 5 dBA over the ambient or in some instances up to 10 dBA above the ambient). The City's Municipal Code daytime and nighttime exterior noise standards of 55 dBA and 50 dBA, respectively, will be applied to this analysis (see Table 10).

PlaceWorks applied the SoundPLAN model for the proposed soccer field lighting project to determine potential noise impacts on neighboring sensitive receptors. SoundPLAN uses industry-accepted propagation algorithms based on International Organization for Standardization (ISO) and ÖAL-28 standards for outdoor sound propagation. The modeling calculations account for classical sound wave divergence (spherical spreading loss with adjustments for source directivity from point sources) plus attenuation factors due to air absorption, ground effects, and shielding. Additionally, SoundPLAN provides for other correction factors, including level increases due to reflections, source directivity, and source tonality. The noise source type selected from the SoundPLAN library was Public Soccer Grounds. Noise modeling was conducted using a grid of receptors to develop noise contours. The noise contours were overlaid at each considered site to provide for a preliminary estimate of noise exposure at nearby noise-sensitive receptors. See Appendix C for modeling results. SoundPLAN noise modeling estimated noise levels at the receptor locations, representing the nearest residential receptors to the project site.

Soccer games and practices and other school events are temporary periodic events that occur throughout the school year Monday through Friday and on Saturdays (see Table 1). The proposed project's primary on-site operational noise source associated with the soccer field would include on-field players and referee whistle blasts. The nearest residential uses are to the north of the field across an alley and are partially shielded by an existing non-continuous 5-foot to 6-foot block wall that allows residents access to driveways. Residential receptors to the west of the project site are shielded by an existing 6-foot continuous sound wall. Table 13, *SoundPLAN Modeled Noise Levels, dBA Leq*, shows ambient noise measurements and modeled operational noise levels associated with the proposed project at noise receptor locations R-1 through R-6. Modeled SoundPLAN scenario inputs, results, and operational noise contours associated with project soccer field noise on the project site and in the greater community for all scenarios are shown in Appendix C.

**Table 13 SoundPLAN Modeled Noise Level, dBA**

| Receiver Location | Ambient Measurement, dBA Leq | Proposed Project SoundPLAN Modeling, dBA Leq | Cumulative Noise Level, dBA Leq | Increase Over Ambient, dBA |
|---|---|---|---|---|
| R-1 8102 Indianapolis Ave. | 55.2 | 40.6 | 55.3 | <1 |
| R-2 8122 Indianapolis Ave. | 55.2 | 39.5 | 55.3 | <1 |
| R-3 8072 Driftwood Drive | 53.9 | 36.6 | 54.0 | <1 |
| R-4 8062 Ebbtide Circle | 53.9 | 34.1 | 53.9 | <1 |
| R-5 8062 Sail Circle | 53.9 | 29.2 | 53.9 | <1 |
| R-6 8121 Kingfisher Drive | 53.9 | 29.2 | 53.9 | <1 |

Source: SoundPLAN. See Appendix C.

As shown in Table 13, future soccer field noise levels would range from 29.2 dBA to 40.6 dBA $L_{eq}$ at the nearest noise sensitive receptors to the lighted field. Proposed project noise levels attributable to soccer noise would be similar to existing noise levels but would occur during the weekday evening hours in the winter, similar to existing conditions in the summer months, not extending past 8:30 pm with all lights being shut off by 9:00 pm (see Table 1). Table 13 also shows that future soccer field activities would result in noise levels more than 10 dBA below ambient noise conditions at the nearest noise sensitive receptors. In addition, future soccer field activities would also result in a negligible, less than 1 dBA, increase over ambient noise levels. Furthermore, future soccer field noise would comply with the City's Municipal Code daytime and nighttime exterior noise standards of 55 dBA and 50 dBA, respectively. Therefore, this impact would be less than significant.

**b) Generation of excessive groundborne vibration or groundborne noise levels?**

**Less Than Significant Impact.** The operation of the proposed project would not include any substantial long-term vibration sources. Thus, no significant vibration effects from operations sources would occur.

## Construction Vibration

### *Vibration Annoyance*

Groundborne vibration is rarely annoying to people who are outdoors, so it is usually evaluated in terms of indoor receivers. For annoyance, vibration is typically noticed nearby when objects in a building generate noise from rattling windows or picture frames. Since construction activities are typically distributed throughout the project site, vibration annoyance impacts are typically based on average vibration levels (levels that would be experienced by sensitive receptors most of the time). Therefore, to represent the worst-case scenario of vibration levels, distances to the nearest sensitive receptor buildings are measured from the closest distances the equipment below might occur to the sensitive receptor. As a result, the calculations were measured from the closest construction activity/light pole installation. For vibration annoyance, the daytime FTA vibration level limit of 78 VdB will apply to the surrounding residential receptors and classroom building to the west.

Table 14, *Worst-Case Annoyance Vibration Levels from Construction Equipment*, shows the vibration levels from typical earthmoving construction equipment at the nearest receptors. Table 14 shows construction-generated vibration levels from a caisson drill or large bulldozer would not exceed 78 VdB at sensitive receptors to the north when operating at 50 feet away. Construction-generated vibration levels at all other receptors would be even lower because they are farther away from project construction activities. Therefore, impacts related to construction vibration annoyance would be less than significant.

# 3. Environmental Analysis

**Table 14 Worst-Case Annoyance Vibration Levels from Construction Equipment**

| | Vibration Levels (VdB) | | | | |
|---|---|---|---|---|---|
| Equipment | Reference Levels at 25 feet | Receptor to North at 50 feet | Receptor to at 440 feet | Receptor to South of at 780 feet | Receptor to West at 115 feet |
| Large Bulldozer | 87 | 78 | 50 | 42 | 67 |
| Caisson Drilling | 87 | 78 | 50 | 42 | 67 |
| Loaded Trucks | 86 | 77 | 49 | 41 | 66 |
| Jackhammer | 79 | 70 | 42 | 34 | 59 |
| Small Bulldozer | 58 | 49 | 21 | 13 | 38 |
| FTA Threshold | - | 78 | 78 | 78 | 78 |
| Exceeds Threshold? | - | **No** | **No** | **No** | **No** |

Source: FTA 2018. See Appendix C.
Notes: **Bold** numbers indicate values that exceed the FTA annoyance criteria.
NA= Not Applicable.
Distances are from the nearest distance from where these equipment pieces may be used to the nearest receptor building within each land use type.

### *Vibration Damage*

Construction operations can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The effects from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight architectural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures.

For reference, a vibration level of 0.2 in/sec PPV is used as the limit for non-engineered timber and masonry buildings (which would apply to the surrounding residential structures) (FTA 2018). Vibration damage is measured from the edge of the project site to the nearest structure (home) façade because vibration damage, unlike human vibration perception or annoyance, is determined by measuring instantaneous peak particle velocity generated by equipment. Table 15, *Vibration Damage Levels for Typical Construction Equipment*, summarizes vibration levels for typical construction equipment at a reference distance of 25 feet and at the nearest sensitive receptors. The nearest structure to proposed construction activities are the residences approximately 50 feet to the north of the project site.

**Table 15 Vibration Damage Levels for Typical Construction Equipment**

| Equipment | PPV (in/sec) | | | | |
|---|---|---|---|---|---|
| | FTA Reference at 25 feet | Receptor to North at 50 feet | Receptor to at 440 feet | Receptor to South of at 780 feet | Receptor to West at 115 feet |
| Large Bulldozer | 0.089 | 0.031 | 0.001 | 0.001 | 0.009 |
| Caisson Drilling | 0.089 | 0.031 | 0.001 | 0.001 | 0.009 |
| Loaded Trucks | 0.076 | 0.027 | 0.001 | 0.000 | 0.008 |
| Jackhammer | 0.035 | 0.012 | 0.000 | 0.000 | 0.004 |
| Small Bulldozer | 0.003 | 0.001 | 0.000 | 0.000 | 0.000 |

Sources: FTA 2018.
Notes: NA= Not Applicable
**Bold** = Threshold exceedance
See Appendix C

As shown in Table 15, the nearest vibration sensitive receptor would be exposed to project construction vibration levels of up to 0.031 in/sec PPV at 50 feet. As a result, project vibration levels would not exceed the FTA 0.2 in/sec PPV threshold at nearby sensitive receptors. Therefore, impacts related to construction vibration damage would be less than significant.

**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?**

**No Impact.** The proposed project is approximately 6.4 miles west from the nearest airport, which is John Wayne Airport. The proposed project would not expose people working in the project area to excessive aircraft noise levels. Therefore, no impact would occur, and no mitigation measures are required.

## 3.14 POPULATION AND HOUSING

Would the project:

**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)?**

**No Impact.** The proposed project would be constructed within the existing Peterson ES campus. The proposed project would serve the existing needs of the campus and community groups and would not increase student enrollment nor student capacity. The proposed project would not create any new employment opportunities that could result in a greater demand for local housing, since the proposed events onsite already occur at the project site. Additionally, the proposed project would continue to utilize the existing roads and infrastructure; with no new roads, expanded utility lines, or housing being proposed. Therefore, implementation of the proposed project would not induce population growth in the area, either directly or indirectly. No impacts related to population growth would occur.

**b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?**

**No Impact.** The proposed project would be constructed within the boundaries of the project site developed with the existing soccer field as seen in Figure 3. No housing exists on the Peterson ES campus, including the project site. Construction of the proposed project would not necessitate the construction of replacement housing elsewhere to accommodate the proposed project. Therefore, no impacts would occur.

# 3.15 PUBLIC SERVICES

Would the 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:

**a) Fire protection?**

**Less Than Significant Impact.** The Huntington Beach Fire Department (HBFD) would provide fire protection and emergency services to the project site. HBFD provides fire protection, rescue, emergency medical, and hazardous materials control and response services (Huntington Beach 2025c). HBFD has a total of eight fire stations that service the City. The nearest HBFD fire station to campus is Fire Station #5, located at 530 Lake Street, approximately 0.70 miles southwest. Other stations may also respond to calls from the project site and/or support fire protection needs at the project site.

## Construction

During the construction phase of the proposed project, there would be a temporary increase of construction workers on-site. Construction of the proposed project would be required to comply with the California Fire Code (CFC) to ensure onsite safety during construction. The code includes standards for building and construction, requirements for emergency access, hazardous material handling, and fire protection systems. Construction of the proposed project would further implement Occupational Safety and Health Administrative (OSHA) regulations to ensure on-site safety during construction. Construction plans of the proposed project would be reviewed and inspected by the Division of State Architects to ensure all requirements are met, such as adequate emergency access to the project site during construction.

Therefore, project construction would not affect fire/emergency response protection services to the extent that new or physically altered fire facilities would be needed to maintain acceptable service ratios, response times, or other performance objectives for fire protection services. Therefore, construction-related impacts on fire protection would be less than significant.

## Operation

The proposed project would install field lighting to allow the existing uses on the multi-use playfield (the proposed soccer field) to continue, and no changes in the number of events would occur, as shown by Table 1. Additionally, the proposed project would not result in an increase in student enrollment on campus. The

installation of field lighting would not generate more people on the project site and therefore would not create an increase in demand for fire protection services compared to existing conditions on-site.

The existing emergency/fire access features to the campus would remain the same and would continue to accommodate emergency ingress and egress by fire trucks, ambulance/paramedic vehicles, and other authorized vehicles. The proposed project would be designed and construction to accommodate emergency access to the proposed project in accordance with the CFC and would be reviewed and approved by the DSA.

The proposed project would have a less than significant impact on fire protection services.

**b) Police protection?**

**Less Than Significant Impact.** The Huntington Beach Police Department (HBPD) serves the City of Huntington Beach and would provide police protection services to the project site. HBPD operates one police station at 2000 Main Street and one police substation at 204 5th Street, approximately 1.30 miles northwest and 1 mile southwest of the project site, respectively.

## Construction

During the construction phases of the proposed project, there would be a temporary increase of construction workers on-site. Construction of the proposed project would maintain emergency access and emergency egress routes during project construction. Active construction areas would be fenced during the construction phase, and construction site access would be limited to authorized personnel. Further, the storage and staging of construction equipment would occur on the project site or on the campus, which would be fenced. Equipment and vehicles would be locked and only accessible by authorized personnel. Therefore, the temporary construction of the proposed project would not materially increase the demand for police protection services. It would not result in the need for physically altered or new police facilities that could result in environmental impacts, and impacts would be less than significant.

## Operation

The proposed project would install field lighting to allow the existing uses on the multi-use playfield (the proposed soccer field) to continue to occur and no changes in the number of events would occur, as shown by Table 1. Additionally, the proposed project would not result in an increase in student enrollment on campus. The installation of field lighting would not generate more people on the project site and therefore would not create an increase in demand for fire protection services compared to existing conditions on-site.

The project site would continue to be fenced to control access and for children's safety. Further, the proposed project would be monitored by existing and new staff. During non-school hours, the campus, including the proposed project would be locked, and security lighting would provide an additional measure of visibility and security during evening and nighttime hours. Further, as discussed under Section 3.15(a), the proposed project would maintain circulation and access points on the campus and project site. DSA would review and approve project design plans to ensure adequate emergency access to the project site. The proposed project would not result in any increases in the demand for police protection services compared to existing conditions, the proposed project would not generate an increase in police protection facilities nor personnel in manner that

would require new or physically altered police protection facilities. The proposed project would not require new or physically altered police protection facilities or routes. The proposed project would have a less than significant impact on police protection services.

**c) Schools?**

**No Impact.** The proposed project includes field lighting improvements to the multipurpose field, the proposed soccer field, at the existing Peterson ES campus. Demand for schools is largely generated by new housing developments. The proposed project would serve existing students and existing after-school programs, and would not generate an increase in student capacity or enrollment. Therefore, no impacts to schools would occur.

**d) Parks?**

**Less Than Significant Impact.** Parks in the City of Huntington Beach are managed by the Parks & Recreation Department. The City of Huntington Beach operates 78 parks totaling 764.5 acres, including facilities available for rent to the public such as rooms, large, three clubhouses, and the City's Newland Barn. Drew Park is the closest recreational facility to campus, approximately 0.40 miles northeast.

Typically, an increase in demand for parks is created by the development of new housing and/or population generating actions (such as large employment centers). The proposed project is an educational facilities project and would not build housing or provide additional employment opportunities. Therefore, the proposed project would not generate new population growth or housing that can increase the demand on parks. The proposed project would not increase the use of existing parks or recreational facilities, or the need for new parks or recreational facilities. Additionally, the project would be available to the public for community events, such as the existing AYSO soccer events, allowing for joint use of the school facilities (consistent with the Civic Center Act). The proposed project would have a less than significant impact on parks.

**e) Other public facilities?**

**Less Than Significant Impact.** The City of Huntington Beach contains a central library and four branch libraries operated by the Huntington Beach Public Library. The Main Street Branch library at 525 Main Street is the closest to the campus, approximately 0.75 mile west of the project site. The proposed project would develop field lighting improvements on an existing school campus and would not induce population growth nor increase student enrollment or capacity on campus. Therefore, the proposed project would not generate any additional demand for library facilities. The proposed project would not require new or physically altered library facilities. A less than significant impact to libraries would occur.

## 3.16 RECREATION

**a) Would the 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?**

**Less Than Significant Impact.** Parks in the City are managed by the Parks & Recreation Department. According to the Huntington Beach Parks and Recreation Department, they manage 79 parks and public

facilities totaling 767 acres. Additionally, there are other recreational areas within the City, including the 98-acre public golf course and 208 acres of public beaches (Huntington Beach 2025d). Drew Park is the closest recreational facility to the Peterson ES campus and is approximately 0.4 mile northeast of the project site.

The proposed project would develop lighting improvements on an existing multi-use playfield on campus to allow existing recreational activities to occur into the evening in the winter months, similar to uses occurring during the summer months. The proposed project would not induce population growth nor increase student enrollment or capacity on campus. Additionally, the proposed project includes enhanced recreational facilities, which would be available to authorized community groups during weekends and outside school hours, subject to District facility use policies and the Civic Center Act. An increase in the use of recreational facilities is generated by an increase in population growth. The proposed project would not develop any new housing and not induce substantial population growth and would be well within the buildout of the City (as discussed in Section 3.14). Therefore, the proposed project would not generate an increased demand for existing neighborhood, regional facilities or other recreational facilities and would not result in substantial physical deterioration of such facilities nor cause deterioration to accelerate. The proposed project would have a less than significant impact on recreation.

**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?**

**Less Than Significant Impact.** As discussed in Section 3.16(a), the increase in use of recreational facilities is generated by an increase in population growth and the proposed project would not develop any new housing and would not induce substantial population growth. The proposed project would allow for evening uses of multi-use playfield to serve the existing Peterson ES student population and community groups such as AYSO, similar to uses occurring during the summer months. Additionally, the proposed project would be exclusively located on the project site and would not include any off-site improvements. Therefore, the proposed project would not include the development of recreational facilities or require the construction or expansion of recreational facilities that would have an adverse physical effect on the environment. A less than significant impact would occur.

## 3.17 TRANSPORTATION

This section is based in part on the Peterson Elementary School Field Lighting Project Traffic Impact Study, prepared by DJ&A, and dated October 22, 2025. The Traffic Impact Study is contained in Appendix D to this IS/MND.

Would the project:

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

**Less Than Significant Impact.** As stated in Section 1.3.1, *Proposed Land Use*, the proposed project would not include any off-site improvements or on-site improvements related to campus circulation. However, the

proposed project would generate additional vehicle trips. According to Table 16, *Forecast Trip Generation*, the proposed project would generate an additional 71 vehicle trips per day.

**Table 16 Forecast Trip Generation**

| Land Use and Time Period | Trip Generation Rate | Distribution | | Trips | | Total |
|---|---|---|---|---|---|---|
| | | Inbound | Outbound | Inbound | Outbound | |
| Soccer Field - PM Peak Hour | 16.43 trips / field | 66% | 34% | 11 | 5 | 16 |
| Soccer Field - Weekday Daily | 71.33 trips / field | 50% | 50% | 36 | 35 | 71 |

Source: DJ&A 2025; Appendix D.

Additionally, traffic levels of service (LOS), which is a City measurement of performance and not a CEQA threshold, are designated A through F, with LOS A representing free flow conditions and LOS F representing severe traffic congestion. The City of Huntington Beach has adopted a tiered LOS standard: LOS D is the performance standard for principal intersections, and LOS C is the performance standard for secondary intersections. Three intersections were analyzed for LOS after completion of the proposed project, which included one non-signalized intersection (Farnsworth Lane and Indianapolis Avenue) and two signalized intersections (Beach Avenue and Indianapolis Avenue; Newland Street and Indianapolis Avenue), both of which are designated secondary intersections.

The primary ordinances and policies addressing the circulation system in the project area are from the City of Huntington Beach General Plan Circulation Element. The Circulation Element addresses the physical circulation system consisting of streets, highways, bicycle routes, equestrian facilities, paths, and sidewalks, as well as available modes of transportation, including cars, buses, bicycles, and walking. How efficiently goods and people move about in a community is one of the most imperative issues a locality must address, as it affects land use, economic vitality, urban design, energy consumption, air quality, and ultimately, the city's infrastructure (Huntington Beach 2017c).

Applicable goals to the proposed project include Goals CIRC-1a, CIRC-2, CIRC-4, CIRC-5, CIRC-6, and CIRC-9. Goal CIRC-1 is about maintaining a desired level of service and capacity on streets and critical intersections within the City. According to Appendix D, the PM peak hour intersection LOS for the opening year of the proposed project (2026) would be LOS A at the Beach Avenue and Indianapolis Avenue intersection and LOS B at the Farnsworth Lane and Indianapolis Avenue and Newland Street and Indianapolis Avenue intersections. As stated above, the City's LOS standard is LOS C for secondary intersections. None of the intersections analyzed for the proposed project would be below LOS C and would not conflict with Goal CIRC-1a.

Goal CIRC-2 is related to providing sufficient parking. As stated above, the Peterson ES campus provides 64 spaces and street parking provides up to 26 parking spaces (Appendix D). As seen in Table 16, the proposed project would generate 16 trips during the PM Peak Hour. Therefore, the proposed project would be able to accommodate the 16 trips during the PM Peak Hour and would not conflict with Goal CIRC-2.

Goals CIRC-4, CIRC-5, CIRC-6, and CIRC-9 are related to pedestrian, bicycle, and public transit facilities and service and emergency vehicle access. As stated above, the proposed project would not include any off-site improvements or on-site improvements related to campus circulation and the additional trips generated by the proposed project would not impact pedestrian, bicycle, and public transit facilities and service and emergency vehicle access. Additionally, the existing pedestrian, bicycle, and public transit facilities are adequate to serve the increase use of the facilities because the increase would be negligible. Therefore, it would not interfere with any existing pedestrian, bicycle, or public transit facilities and services and would not conflict with Goals CIRC-4, CIRC-5, CIRC-6, and CIRC-9. Therefore, impacts would be less than significant.

**b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?**

**Less Than Significant Impact.** Vehicle delays and levels of service (LOS) have historically been used as the basis for determining the significance of traffic impacts as standard practice in CEQA documents. On September 27, 2013, SB 743 was signed into law, starting a process that fundamentally changed transportation impact analyses as part of CEQA compliance. SB 743 eliminated auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts under CEQA. As part of the current CEQA Guidelines, the criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)). Pursuant to SB 743, the California Natural Resources Agency adopted revisions to the CEQA Guidelines on December 28, 2018, to implement SB 743. CEQA Guidelines Section 15064.3 describes how transportation impacts are to be analyzed after SB 743. Under the Guidelines, metrics related to VMT were required beginning July 1, 2020, to evaluate the significance of transportation impacts under CEQA for development projects, land use plans, and transportation infrastructure projects. State courts ruled that under the Public Resources Code Section 21099, subdivision (b)(2), "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment" under CEQA, except for roadway capacity projects.

The Governor's Office of Land Use and Climate Innovation (LCI), formerly the Governor's Office of Planning and Research, published the Technical Advisory on Evaluating Transportation Impacts in CEQA in 2018, which provides screening thresholds for evaluating vehicle miles traveled (VMT) impacts for small projects. The Technical Advisory states that projects generating or attracting fewer than 110 vehicle trips per day may generally be presumed to result in a less-than-significant transportation impact.

As of the preparation of this document, the City of Huntington Beach has not adopted formal VMT thresholds; however, the City has provided guidance in prior environmental documents. The City has directed that VMT analyses be consistent with the Technical Advisory on Evaluating Transportation Impacts in CEQA, and that approach has been applied to the proposed project (KH 2022).

In addition to the project generating under 110 trips, the proposed project would serve an existing student population and would not increase enrollment, alter attendance boundaries, or introduce new programs that would attract additional vehicle trips. Therefore, the project would not generate new regional travel demand or increase VMT. Consistent with LCI guidance for locally serving uses that do not induce additional travel, the project would result in a less-than-significant transportation impact under CEQA (LCI 2018).

As shown in Table 16, the proposed project would generate approximately 71 daily vehicle trips, which is below the 110-trip screening threshold identified in the Technical Advisory. Therefore, transportation impacts would be less than significant.

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

**No Impact.** The proposed project would not add or alter any on-site or off-site access or circulation features that would create or increase any design hazards or incompatible uses. Vehicular, bicyclist, and pedestrian access to the Peterson ES campus and project site would continue to occur via properly designed driveways, sidewalks, cross walks, and bike lanes. Additionally, the current on-site circulation is designed to serve the typical school day pick up and drop off activity. This design maximizes on-site circulation and queuing capacity. The demand for on-site circulation and queuing regarding athletic field activities is anticipated to be negligible compared to the existing project site conditions during a typical school day.

The streets, intersections, driveways, and on-site circulation system are designed to accommodate the anticipated levels of vehicular and pedestrian activity and have historically been accommodating school-related daily traffic as well as traffic generated by the existing soccer fields and other campus uses such as Fall Festival and Spring Fling. As the proposed project would not result in any adverse changes to the access or circulation features at the school or on the surrounding streets, there would be no impacts involving increased hazards due to a geometric design feature or incompatible uses. Therefore, no impacts would occur.

**d) Result in inadequate emergency access?**

**No Impact.** As stated above, the proposed project would not include any on-site or off-site access or circulation feature improvements. Vehicle access to the project site would still be provided by one ingress driveway from Farnsworth Lane at the northern end of the parking lot, and two egress driveways that connect back to Farnsworth Lane. Additionally, the existing on-site circulation is designed to efficiently accommodate typical school day pick-up and drop-off activities, maximizing circulation and queuing capacity. Traffic demand related to the proposed project is expected to be minimal relative to existing conditions. As such, the existing campus circulation features would continue to accommodate emergency access to the project site and campus. Therefore, no impacts would occur.

## 3.18 TRIBAL CULTURAL RESOURCES

**a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 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**

**Less Than Significant Impact With Mitigation Incorporated.** As discussed under Section 3.5(a), the project site is not listed or eligible for listing in the California Register of Historical Resources, National Register of Historic Places, California State Historical Landmarks, or Points of Historical Interest or in a local register of historical resources (OHP 2025; NPS 2025). The project site does not meet any of the historic resource criteria and does not meet the definition of a historic resource pursuant to CEQA. The project would not impact Tribal Cultural Resources (TCR) listed on any of the registers of historic resources.

Additionally, a Sacred Lands File request was submitted to the Native American Heritage Commission (NAHC) and received a negative result that there are no known sacred sites or TCR within or in the vicinity of the project site. However, development of the proposed project could encounter previously unknown TCR and human remains. As discussed in Section 3.5(c), if human remains and/or any associated grave goods, if encountered, shall be treated in accordance with procedures and requirements in Sections 5097.94 and 5097.98 of the Public Resources Code; Section 7050.5 of the California Health and Safety Code; and CEQA Guidelines Section 15064.5. Further, although no known TCR have been identified on the project site, the proposed project has the potential to disturb subsurface deposits possessing traditional or cultural significance to Native American or other descendant communities. With implementation of Mitigation Measures TCR-1 and compliance with the applicable state regulations, impacts to tribal cultural resources would be less than significant.

**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 section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

**Less Than Significant Impact With Mitigation Incorporated.** In accordance with Public Resources Code Section 21080.1(d), a lead agency is required to provide formal notification of intended development projects to Native American tribes that have requested to be on the lead agency's list for receiving such notification. The formal notification is required to include a brief description of the proposed project and its location, lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation. However, no tribes have requested to be on the District's AB 52 notification list. Further, a Sacred Lands File request was submitted to the NAHC and received a negative result that there are no known sacred sites or TCR within or in the vicinity of the project site.

Although unlikely, the potential to unearth TCR during ground disturbing activities may occur. In the event TCRs are discovered, Mitigation Measure TCR-1 provides guidelines on how to proceed to protect TCRs. Therefore, implementation of Mitigation Measure TCR-1 would reduce impacts to less than significant.

## Mitigation Measure

TCR-1 If tribal cultural resources are inadvertently discovered during ground disturbing activities for this project. The following procedures will be carried out for treatment and disposition of the discoveries:

- Upon discovery of any Tribal Cultural Resources, construction activities shall cease in the immediate vicinity of the find (not less than the surrounding 100 feet) until the find can be assessed.
- All Tribal Cultural Resources unearthed by project activities shall be evaluated by the qualified archaeologist and/or applicable Tribal monitor. If the resources are Native American in origin, the applicable tribe will retain the resource in the form and/or manner the Tribe deems appropriate, for educational, cultural and/or historic purposes.
- Work may continue on other parts of the project site while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]). If a non-Native American resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and PRC Sections 21083.2(b) for unique archaeological resources.
- Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin shall be curated at a public, non-profit institution with a research interest in the materials, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes.

## 3.19 UTILITIES AND SERVICE SYSTEMS

Would the project:

**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?**

**Less Than Significant Impact.**

### Water

The proposed project would install new field lighting poles to allow for evening uses for various after-school events during the winter months, which may increase the demand for water. Water is provided to the campus and project site by the City's Utilities Division of the City Public Works Department. Potable water would continue to be provided to the project site through connections to the existing water mains. The existing soccer field watering system would continue to operate in accordance with the California Building Code and CALGreen requirements, such as CALGreen Division 5.304, Outdoor Water Use. As further discussed under

Section 3.19(b), the City's Utilities Division provides water to the campus that is sourced from the local groundwater and supplemental imported potable water from the Municipal Water District of Orange County (MWDOC). According to the City of Huntington Beach Urban Water Management Plan (UWMP), there is adequate water supply to service the City through 2045. Therefore, the City has sufficient water capacity to serve the proposed project (Huntington Beach 2020). The proposed project would not require the construction of new or expanded water facilities that could cause significant effects. Impacts would be less than significant.

### Wastewater

The proposed project would install new field lighting poles to would allow for evening uses for various after school events, which may slightly increase the generation of wastewater. The Utilities Division of the City's Public Works Department provides wastewater collection and conveyance service to the campus. The City's Utilities Division conveys wastewater generated at the campus to the Orange County Sanitation District (OC SAN) for treatment and disposal (Huntington Beach 2020). OC San has a system of gravity flow sewers, pump stations, and pressurized sewers to convey wastewater to two treatment plants. As of fiscal years 2022 through 2024, plant No. 1 in Fountain Valley has a primary and secondary treatment capacity of 390 million gallons per day (MGD), and plant No. 2 in the City has a primary and secondary treatment capacity of 318 MGD (OC SAN 2022). The OC SAN has a total 2023-24 average daily flow of 192 MGD of wastewater (OC SAN 2025). As further discussed in Section 3.19(c), the proposed project would not substantially increase wastewater. Wastewater generated by the proposed project will be conveyed to the existing sewer lines on campus. Therefore, the proposed project would not require the construction of new or expanded wastewater facilities that could cause significant environmental effects. Impacts would be less than significant.

### Stormwater Drainage

The proposed project would result in a slight increase in impervious surfaces compared to existing conditions with the installation of new field lighting poles with impervious footings. The increase in impervious surfaces due to the proposed project would be minor, and the majority of the project site would remain in its current state (i.e., a grass soccer field). The stormwater from the proposed project would be conveyed to existing stormwater drains on campus, percolate into the soil, or to the neighboring storm drain system along roadways. The proposed project would not significantly increase or change the stormwater volume, rate, or pattern. Beyond connecting to existing stormwater system. Impacts would be less than significant.

### Electric Power

Electricity is provided by Southern California Edison (SCE). The proposed project would require utility trenching and connect to existing electric power infrastructure for operation. Although the proposed project would result in a higher electricity demand compared to existing conditions, the increase would be negligible compared to SCE's capacity. The proposed project would be required to comply with energy efficiency standards set forth by the California Building Code and CALGreen. Therefore, implementation of the proposed project would not result in major construction related to electrical power facilities that could cause significant environmental impacts. Impacts would be less than significant.

### Natural Gas

Natural gas service is provided by the Southern California Gas Company. The proposed project would not require the use of natural gas during construction nor operation, and therefore no impacts would occur.

### Telecommunications

The proposed project would not require additional telecommunications facilities demand. The proposed project would not require off-site construction or relocation of utilities, and therefore no impacts would occur.

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

**Less Than Significant Impact.** The City of Huntington Beach UWMP determined that there is adequate water supply to service the City through 2045. The water supply is primarily sourced from ground water (70 percent), and the remaining water supplies are imported water (30 percent). The UWMP projects that the City will have sufficient water supplies to meet expected demands in normal years, single-dry years, and multiple-dry years through 2030 (Huntington Beach 2020).

The proposed project would not result in additional staff, capacity, or new development that would require installation of a water line connection or utility hookups. However, the proposed project would allow for evening uses for various after-school events during the winter months, which may slightly increase the demand for water. The extended campus events would allow people to continue to utilize the campus's existing facilities (e.g., bathrooms, water fountains) in the evening hours during the winter months, similar to uses occurring during the summer months. Such uses already exist on campus, and the proposed project would not result in a substantial increase in event participants. The proposed project would result in a negligible increase of water demand, which would be within the projected demand of the UWMP. Furthermore, development of the proposed project would be required to comply with the provisions of CALGreen Division 5.304, Outdoor Water Use. The City contains adequate water supplies to meet the water demands of the proposed project and the City during normal, dry, and multiple dry years. Impacts would be less than significant.

**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?**

**Less Than Significant Impact.** Wastewater generated at the campus is conveyed to the OS SAN treatment plants. As stated above, as of fiscal years 2022 through 2024, plant No. 1 in Fountain Valley has a primary and secondary treatment capacity of 390 MGD, and plant No. 2 in the City has a primary and secondary treatment capacity of 318 MGD (OC SAN 2022). As of 2024, the OC SAN has an average daily flow of 192 MGD of wastewater, with 124 MGD treated at plant No. 1 and 68 MGD treated at plant No. 2 (OC SAN 2025). This results in approximately 250 MGD excess capacity at plant No. 2.

The proposed project would not result in additional staff, student capacity, or new development that would require installation of a wastewater line connection or utility hookups. However, the proposed project would allow for evening uses for various after-school events, which may increase the generation of wastewater. The

extended campus events would allow people to continue to utilize the campus's existing facilities (e.g., bathrooms, water fountains) in the evening hours, similar to uses occurring during the summer months. Such uses already exist on campus, and the proposed project would not result in a substantial increase in event participants. The proposed project would result in a negligible increase in wastewater generation. However, existing wastewater facilities would have adequate capacity to serve the proposed project in addition to the existing commitments. Therefore, impacts would be less than significant.

**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?**

**Less Than Significant Impact.** During construction the proposed project would generate minimal waste. CALGreen Section 5.408, Construction Waste Reduction, Disposal, and Recycling, requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

During the operation phase, the proposed project may increase the amount of solid waste generated by the extending evening events compared to existing conditions. In the City of Huntington Beach, including the proposed project at the Peterson ES campus, solid waste is transported by Republic Services to regional landfills. Solid waste generated in the City of Huntington Beach is disposed to landfills in Orange County, which include the Frank R. Bowerman Landfill and Olinda Alpha Landfill, with remaining capacities of 160,896,082 cubic yards and 17,500,000 cubic yards, respectively (CalRecycle 2025). The extended campus events would allow people to continue to utilize the campus's existing facilities (e.g., sports fields, bathrooms) in the evening hours, similar to uses occurring during the summer months. Such uses already exist on campus, and the proposed project would not result in a substantial increase in event participants. The proposed project would result in a negligible increase in solid waste generation, well within the remaining capacity of area landfills. The proposed project would not adversely impact landfill capacity or impair attainment of solid waste reduction goals, and impacts would be less than significant.

**e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

**Less Than Significant Impact.** The District would continue to comply with federal, state, and local statutes and regulations related to solid waste, such as the California Integrated Waste Management Act and local recycling and waste programs. As discussed in Section 3.19(d), the proposed project would generate minimal solid waste during construction and from operational uses. The District and its construction contractor would comply with all applicable laws and regulations and make every effort to reuse and/or recycle the construction debris that would otherwise be taken to a landfill. CALGreen Section 5.408, Construction Waste Reduction, Disposal, and Recycling, requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. Therefore, impacts would be less than significant.

# 3.20 WILDFIRE

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

**a) Substantially impair an adopted emergency response plan or emergency evacuation plan?**

**Less Than Significant Impact.** The project site is in the City of Huntington Beach and not in a state responsibility area or a very high fire hazard severity zone (VHFHSZ). The closest VHRHSZ is approximately 11 miles southeast of the project site (CAL FIRE 2024). The proposed project is on the existing Peterson ES campus and does not include any right-of-way improvements. According to the City's Natural and Environmental Hazards Element, no land with a fire hazard severity zone designation is in Huntington Beach (Huntington Beach 2017). Therefore, the proposed project would not conflict with adopted emergency response or evacuation plans. The surrounding roadways would continue to provide emergency access to the project site and surrounding properties during construction and operation. The proposed project would not result in inadequate emergency access, and impacts would be less than significant.

**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?**

**Less Than Significant Impact.** As stated above in Section 3.20(a), the project site is in Huntington Beach and not within a state responsibility area or a VHFHSZ, and no land with a fire hazard severity zone designation is in Huntington Beach (CAL FIRE 2024; Huntington Beach 2017b). The project site is generally flat and in an urbanized area; according to the Natural and Environmental Hazards Element, urban fires are the primary fire hazard in the City (Huntington Beach 2017b). However, the proposed project would be designed in accordance with the CBC and CFC. Project design plans would also be reviewed by the DSA. Fire suppression equipment specific to construction would be maintained on site. Additionally, project construction would comply with applicable existing regulations; safety standards; and, where applicable, manufacturer's specifications for the proper maintenance of mechanical equipment, handling and storage of flammable materials, and cleanup of spills of flammable materials. Therefore, the proposed project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire due to slope, prevailing winds, and other factors. Impacts would be less than significant.

**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?**

**Less Than Significant Impact.** The project site is in an urban area and is served by existing utility infrastructure, including water and power. Development of the proposed project would not require new utility hook-ups to the existing utilities in the project site area but would require utility trenching for an electrical utility line that would connect the proposed lights to existing onsite utilities. All utilities lines would be underground. The proposed project would be designed and constructed in accordance with the CBC and CFC. These project features would not exacerbate fire risk. Development of the proposed project would not require the installation

of roads and fuel breaks. Therefore, the proposed project does not include the installation or maintenance of infrastructure that could exacerbate fire risk or result in temporary or ongoing impacts to the environment. Impacts would be less than significant.

**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?**

**Less Than Significant Impact.** As discussed in Section 3.9, *Hydrology and Water Quality*, the project site is partially within FEMA Flood Zone X, an area with reduced flood risk due to levee. The proposed project would install the field lighting poles at a soccer field in Flood Zone X (FEMA 2025).

Additionally, as stated in Section 3.10(c)(iv) above, the project site is essentially flat and developed, and no landslides have occurred at or in the immediate vicinity of the project site (DOC 2025a). Therefore, the project site has a low risk of post-fire slope instability or drainage changes. The proposed project would not 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. A less than significant impact would occur.

## 3.21 MANDATORY FINDINGS OF SIGNIFICANCE

**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?**

**Less Than Significant Impact With Mitigation Incorporated.** As discussed in Sections 3.4, *Biological Resources*; 3.5, *Cultural Resources*; 3.7, *Geology and Soils*; and 3.18, *Tribal Cultural Resources*, with the incorporation of mitigation measures the proposed project would result in less than significant impacts to biological resources (including nesting birds), paleontological resources, and cultural and tribal cultural resources. As discussed in Section 3.4, *Biological Resources*, although the project site is developed, the project site does include two trees that could be used for nesting by bird species. Construction activities could potentially impact nesting birds on the project site. Impacts to nesting birds (avian species) would be less than significant with the implementation of MM BIO-1. As discussed under Section 3.5 and Section 3.7, the project site is disturbed with the Peterson ES campus. Since the project site has been previously disturbed and earthwork activities associated with the proposed project would generally be surface level, it is unlikely that buried archaeological and paleontological resources would be encountered. Nevertheless, Mitigation Measures CUL-1 and GEO-1 include processes to follow in the unlikely event that archaeological or paleontological resources are encountered. With incorporation of Mitigation Measures GEO-1 and CUL-1, impacts to paleontological and archaeological resources would be less than significant.

Further, as discussed in Section 3.18, no tribal consultation pursuant to AB 52 occurred because no tribe requested to be on the District's AB 52 notification list. However, in the unlikely event TCRs are discovered during ground-disturbing activities, Mitigation Measure TCR-1 provides guidelines on how to protect TCRs, reducing impacts to less than significant. With identified mitigation measures, the proposed project would not

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 nor eliminate important examples of the major periods of California history or prehistory. A less than significant impact would occur with the incorporation of mitigation measures.

**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.)**

**Less Than Significant Impact.** The potential for cumulative impacts occurs when the independent impacts of a given project are combined with the impacts of related projects in proximity to the project site that would create impacts that are greater than those of the project alone. As discussed previously in this IS/MND, the proposed project would have no impact, a less than significant impact, or a less than significant impact with mitigation measures to aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, energy, geology and soils, GHG emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire. Therefore, all impacts are individually limited and would not result in any cumulatively significant impact. Impacts would be less than significant, and no mitigation measures are required.

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

**Less Than Significant Impact.** The proposed project would comply with applicable local, state, and federal laws governing general welfare and environmental protection. The implementation of required mitigation measures specified in this IS/MND would reduce impacts to less than significant. The proposed project would not, directly nor indirectly, result in environmental effects that could cause substantial adverse effects on human beings. A less than significant impact would occur.

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# Appendix A Air Quality and Greenhouse Gas Background and Modeling Data

# Appendix

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# Air Quality and Greenhouse Gas Background and Modeling Data

## AIR QUALITY

### Air Quality Regulatory Setting

The proposed project has the potential to release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, it falls under the ambient air quality standards promulgated at the local, state, and federal levels. The project site is in the South Coast Air Basin (SoCAB) and is subject to the rules and regulations imposed by the South Coast Air Quality Management District (South Coast AQMD). However, South Coast AQMD reports to California Air Resources board (CARB), and all criteria emissions are also governed by the California and national Ambient Air Quality Standards (AAQS). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

#### AMBIENT AIR QUALITY STANDARDS

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

These National AAQS and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 1, *Ambient Air Quality Standards for Criteria Pollutants*, these pollutants include ozone ($O_3$), nitrogen dioxide ($NO_2$), carbon monoxide (CO), sulfur dioxide ($SO_2$), coarse inhalable particulate matter ($PM_{10}$), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for

sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

**Table 1 Ambient Air Quality Standards for Criteria Pollutants**

| Pollutant | Averaging Time | California Standard[1] | Federal Primary Standard[2] | Major Pollutant Sources |
|---|---|---|---|---|
| Ozone ($O_3$)[3] | 1 hour | 0.09 ppm | * | Motor vehicles, paints, coatings, and solvents. |
| | 8 hours | 0.070 ppm | 0.070 ppm | |
| Carbon Monoxide (CO) | 1 hour | 20 ppm | 35 ppm | Internal combustion engines, primarily gasoline-powered motor vehicles. |
| | 8 hours | 9.0 ppm | 9 ppm | |
| Nitrogen Dioxide ($NO_2$) | Annual Arithmetic Mean | 0.030 ppm | 0.053 ppm | Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads. |
| | 1 hour | 0.18 ppm | 0.100 ppm | |
| Sulfur Dioxide ($SO_2$) | Annual Arithmetic Mean | * | 0.030 ppm | Fuel combustion, chemical plants, sulfur recovery plants, and metal processing. |
| | 1 hour | 0.25 ppm | 0.075 ppm | |
| | 24 hours | 0.04 ppm | 0.14 ppm | |
| Respirable Coarse Particulate Matter ($PM_{10}$) | Annual Arithmetic Mean | 20 µg/m$^3$ | * | Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays). |
| | 24 hours | 50 µg/m$^3$ | 150 µg/m$^3$ | |
| Respirable Fine Particulate Matter ($PM_{2.5}$)[4,6] | Annual Arithmetic Mean | 12 µg/m$^3$ | 9 µg/m$^3$ | Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays). |
| | 24 hours | * | 35 µg/m$^3$ | |
| Lead (Pb) | 30-Day Average | 1.5 µg/m$^3$ | * | Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline. |
| | Calendar Quarter | * | 1.5 µg/m$^3$ | |
| | Rolling 3-Month Average | * | 0.15 µg/m$^3$ | |
| Sulfates ($SO_4$)[5] | 24 hours | 25 µg/m$^3$ | * | Industrial processes. |
| Visibility Reducing Particles | 8 hours | ExCo =0.23/km visibility of 10≥ miles | No Federal Standard | Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. |

**Table 1 Ambient Air Quality Standards for Criteria Pollutants**

| Pollutant | Averaging Time | California Standard[1] | Federal Primary Standard[2] | Major Pollutant Sources |
|---|---|---|---|---|
| Hydrogen Sulfide | 1 hour | 0.03 ppm | No Federal Standard | Hydrogen sulfide ($H_2S$) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation. |
| Vinyl Chloride | 24 hours | 0.01 ppm | No Federal Standard | Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents. |

Source: CARB 2024a.

Notes: ppm: parts per million; µg/m$^3$: micrograms per cubic meter

* Standard has not been established for this pollutant/duration by this entity.

1 California standards for $O_3$, CO (except 8-hour Lake Tahoe), $SO_2$ (1 and 24 hour), $NO_2$, and particulate matter ($PM_{10}$, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than $O_3$, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The $O_3$ standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For $PM_{10}$, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m$^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m$^3$ to 12.0 µg/m$^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m$^3$, as was the annual secondary standard of 15 µg/m$^3$. The existing 24-hour $PM_{10}$ standards (primary and secondary) of 150 µg/m$^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

5 On June 2, 2010, a new 1-hour $SO_2$ standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

6 On February 7, 2024, the national annual $PM_{2.5}$ standard was lowered from 12 µg/m$^3$ to 9 µg/m$^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary), secondary annual $PM_{2.5}$ standard, and $PM_{10}$ standards (primary and secondary) were retained

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building and Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

## AIR POLLUTANTS OF CONCERN

### Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources and include CO, VOC, $NO_2$, $SO_X$, $PM_{10}$, $PM_{2.5}$, and Pb. Of these, CO, $SO_2$, $NO_2$, $PM_{10}$, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen ($NO_X$) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone ($O_3$) and $NO_2$ are

the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

**Carbon Monoxide (CO)** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion, engines and motor vehicles operating at slow speeds are the primary source of CO in the SoCAB. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (South Coast AQMD 2005; US EPA 2025b). The SoCAB is designated as being in attainment under the California AAQS and attainment (serious maintenance) under the National AAQS (CARB 2025a).

**Volatile Organic Compounds (VOC)** are composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources include evaporative emissions from paints and solvents, asphalt paving, and household consumer products such as aerosols (South Coast AQMD 2005). There are no AAQS for VOCs. However, because they contribute to the formation of $O_3$, South Coast AQMD has established a significance threshold (South Coast AQMD 2023a). The health effects for ozone are described later in this section.

**Nitrogen Oxides ($NO_X$)** are a by-product of fuel combustion and contribute to the formation of ground-level $O_3$, $PM_{10}$, and $PM_{2.5}$. The two major forms of $NO_X$ are nitric oxide (NO) and nitrogen dioxide ($NO_2$). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of $NO_X$ produced by combustion is NO, but NO reacts quickly with oxygen to form $NO_2$, creating the mixture of NO and $NO_2$ commonly called $NO_X$. $NO_2$ is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, $NO_2$ is only potentially irritating. $NO_2$ absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. $NO_2$ exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term $NO_2$ exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between elevated short-term $NO_2$ concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (South Coast AQMD 2005; USEPA 2025b). On February 21, 2019, CARB's Board approved the separation of the area that runs along the State Route 60 corridor through portions of Riverside, San Bernardino, and Los Angeles counties from the remainder of the SoCAB for state nonattainment designation purposes. The Board designated this corridor as nonattainment.[1] The remainder of the SoCAB is designated in attainment (maintenance) under the National AAQS and attainment under the California AAQS (CARB 2025a).

[1] CARB is proposing to redesignate SR-60 Near-Road Portion of San Bernardino, Riverside, and Los Angeles Counties in the SoCAB as attainment for $NO_2$ at the February 24, 2022 Board Hearing (CARB 2024e).

**Sulfur Dioxide ($SO_2$)** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and chemical processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of $SO_2$. When sulfur dioxide forms sulfates ($SO_4$) in the atmosphere, together these pollutants are referred to as sulfur oxides ($SO_X$). Thus, $SO_2$ is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, $SO_2$ may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to $SO_2$, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. These effects are particularly adverse for asthmatics at elevated ventilation rates (e.g., while exercising or playing) at lower concentrations and when combined with particulates, $SO_2$ may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency facilities and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics (South Coast AQMD 2005; USEPA 2025b). The SoCAB is designated as attainment under the California and National AAQS (CARB 2025a).

**Suspended Particulate Matter ($PM_{10}$ and $PM_{2.5}$)** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or $PM_{10}$, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤0.01 millimeter). Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤0.002.5 millimeter). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both $PM_{10}$ and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than $PM_{10}$ to contribute to health effects and at far lower concentrations. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing) (South Coast AQMD 2005). There has been emerging evidence that ultrafine particulates, which are even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.0001 millimeter) have human health implications because their toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (South Coast AQMD 2022). However, the EPA and the California Air Resources Board (CARB) have not adopted AAQS to regulate these particulates. Diesel particulate matter is classified by CARB as a carcinogen (CARB 2025b). Particulate matter can also cause environmental effects such as visibility impairment,[2] environmental damage,[3] and aesthetic damage[4] (South

[2] $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

[3] Particulate matter can be carried over long distances by wind and then settle on ground or water, making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

[4] Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

Coast AQMD 2005; USEPA 2025b). The SoCAB is a nonattainment area for $PM_{2.5}$ under California and National AAQS and a nonattainment area for $PM_{10}$ under the California AAQS (CARB 2025a).[5]

**Ozone (**$O_3$) is a key ingredient of "smog" and is a gas that is formed when VOCs and $NO_X$, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. $O_3$ is a secondary criteria air pollutant. $O_3$ concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. $O_3$ poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing $O_3$ can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level $O_3$ also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. $O_3$ also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, $O_3$ harms sensitive vegetation during the growing season (South Coast AQMD 2005; USEPA 2025b). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2025a).

**Lead (Pb)** is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (South Coast AQMD 2005; USEPA 2025b). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted more strict lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.[6] As a result of these violations, the Los Angeles County portion of the SoCAB is designated as nonattainment under the National AAQS for lead (South Coast AQMD 2012; CARB 2025a). However, lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011 (South Coast AQMD 2012). CARB's State Implementation Plan (SIP) revision was submitted to the EPA for approval.

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5 CARB approved the South Coast AQMD's request to redesignate the SoCAB from serious nonattainment for $PM_{10}$ to attainment for $PM_{10}$ under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour $PM_{10}$ standards from 2004 to 2007. The EPA approved the State of California's request to redesignate the South Coast $PM_{10}$ nonattainment area to attainment of the $PM_{10}$ National AAQS, effective on July 26, 2013.

6 Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 showed that the Trojan Battery Company and Exide Technologies exceed the federal standards (South Coast AQMD 2012).

Because emissions of lead are found only in projects that are permitted by South Coast AQMD, lead is not a pollutant of concern for the proposed project.

Table 2, *Criteria Air Pollutant Health Effects Summary*, summarizes the potential health effects associated with the criteria air pollutants.

**Table 2 Criteria Air Pollutant Health Effects Summary**

| Pollutant | Health Effects | Examples of Sources |
|---|---|---|
| Carbon Monoxide (CO) | • Chest pain in heart patients<br>• Headaches, nausea<br>• Reduced mental alertness<br>• Death at very high levels | Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves |
| Ozone ($O_3$) | • Cough, chest tightness<br>• Difficulty taking a deep breath<br>• Worsened asthma symptoms<br>• Lung inflammation | Atmospheric reaction of organic gases with nitrogen oxides in sunlight |
| Nitrogen Dioxide ($NO_2$) | • Increased response to allergens<br>• Aggravation of respiratory illness | Same as carbon monoxide sources |
| Particulate Matter ($PM_{10}$ and $PM_{2.5}$) | • Hospitalizations for worsened heart diseases<br>• Emergency room visits for asthma<br>• Premature death | Cars and trucks (particularly diesels)<br>Fireplaces and woodstoves<br>Windblown dust from overlays, agriculture, and construction |
| Sulfur Dioxide ($SO_2$) | • Aggravation of respiratory disease (e.g., asthma and emphysema)<br>• Reduced lung function | Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, and industrial processes |
| Lead (Pb) | • Behavioral and learning disabilities in children<br>• Nervous system impairment | Contaminated soil |

Source: CARB 2025c.

## Toxic Air Contaminants

The public's exposure to air pollutants classified as toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code §7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

### *Diesel Particulate Matter*

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

### *Community Risk*

In addition, to reduce exposure to TACs, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to provide guidance regarding the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks

when placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic, DPM from trucks, and benzene and 1,3-butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

## AIR QUALITY MANAGEMENT PLANNING

The South Coast AQMD is the agency responsible for improving air quality in the SoCAB and ensuring that the National and California AAQS are attained and maintained. South Coast AQMD is responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

### 2022 AQMP

South Coast AQMD adopted the 2022 AQMP on December 2, 2022, which serves as an update to the 2017 AQMP. On October 1, 2015, the EPA strengthened the National AAQS for ground-level ozone, lowering the primary and secondary ozone standard levels to 70 parts per billion (ppb) (2015 Ozone National AAQS.). The SoCAB is currently classified as an "extreme" nonattainment for the 2015 Ozone National AAQS. Meeting the 2015 federal ozone standard requires reducing $NO_x$ emissions, the key pollutant that creates ozone, by 67 percent more than is required by adopted rules and regulations in 2037. The only way to achieve the required $NO_x$ reductions is through extensive use of zero emission (ZE) technologies across all stationary and mobile sources. South Coast AQMD's primary authority is over stationary sources which account for approximately 20 percent of $NO_x$ emissions. The overwhelming majority of $NO_x$ emissions are from heavy-duty trucks, ships and other State and federally regulated mobile sources that are mostly beyond the South Coast AQMD's control. The region will not meet the standard absent significant federal action. In addition to federal action, the 2022 AQMP requires substantial reliance on future deployment of advanced technologies to meet the standard. The control strategy for the 2022 AQMP includes aggressive new regulations and the development of incentive programs to support early deployment of advanced technologies. The two key areas for incentive programs are (1) promoting widespread deployment of available ZE and low-$NO_x$ technologies and (2) developing new ZE and ultra-low $NO_x$ technologies for use in cases where the technology is not currently available. South Coast AQMD is prioritizing distribution of incentive funding in Environmental Justice areas and seeking opportunities to focus benefits on the most disadvantaged communities (South Coast AQMD 2022).

### Lead State Implementation Plan

In 2008, EPA designated the Los Angeles County portion of the SoCAB nonattainment under the federal lead (Pb) classification due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in Vernon and the City of Industry exceeding the new standard. The rest of the SoCAB, outside the Los Angeles County nonattainment area remains in attainment of the new standard. On May 24, 2012, CARB approved the SIP revision for the federal lead standard, which

the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to EPA for approval.

### South Coast AQMD PM2.5 Redesignation Request and Maintenance Plan

In 1997, the EPA adopted the 24-hour fine $PM_{2.5}$ standard of 65 micrograms per cubic meter ($\mu g/m^3$). In 2006, this standard was lowered to a more health-protective level of 35 $\mu g/m^3$. The SoCAB is designated nonattainment for both the 65 and 35 $\mu g/m^3$ 24-hour $PM_{2.5}$ standards (24-hour $PM_{2.5}$ standards). In 2020, monitored data demonstrated that the SoCAB attained both 24-hour $PM_{2.5}$ standards. The South Coast AQMD has developed the 2021 Redesignation Request and Maintenance Plan for the 1997 and 2006 24-hour $PM_{2.5}$ Standards demonstrating that the SoCAB has met the requirements to be redesignated to attainment for the 24-hour $PM_{2.5}$ standards (South Coast AQMD 2021a).

### AB 617, Community Air Protection Program

Assembly Bill (AB) 617 (C. Garcia, Chapter 136, Statutes of 2017) requires local air districts to monitor and implement air pollution control strategies that reduce localized air pollution in communities that bear the greatest burdens. In response to AB 617, CARB has established the Community Air Protection Program.

Air districts are required to host workshops to help identify disadvantaged communities disproportionately affected by poor air quality. Once the criteria for identifying the highest priority locations have been identified and the communities have been selected, new community monitoring systems would be installed to track and monitor community-specific air pollution goals. In 2018 CARB prepared an air monitoring plan (Community Air Protection Blueprint), that evaluates the availability and effectiveness of air monitoring technologies and existing community air monitoring networks. Under AB 617, the Blueprint is required to be updated every five years.

Under AB 617, CARB is also required to prepare a statewide strategy to reduce TACs and criteria pollutants in impacted communities; provide a statewide clearinghouse for best available retrofit control technology; adopt new rules requiring the latest best available retrofit control technology for all criteria pollutants for which an area has not achieved attainment of California AAQS; and provide uniform, statewide reporting of emissions inventories. Air districts are required to adopt a community emissions reduction program to achieve reductions for the communities impacted by air pollution that CARB identifies.

## Existing Conditions

### CLIMATE/METEOROLOGY

### South Coast Air Basin

The project site lies in the South Coast Air Basin (SoCAB), which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually

mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (South Coast AQMD 2005).

### *Temperature and Precipitation*

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The lowest average temperature is reported at 57.1°F in December, and the highest average temperature is 72.4°F in August (USA.Com 2025).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from October through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages 13.95 inches per year in the vicinity of the area (USA.Com 2025).

### *Humidity*

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the (South Coast AQMD 2005).

### *Wind*

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (South Coast AQMD 2005).

### *Inversions*

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the marine/subsidence inversion and the radiation

inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area (South Coast AQMD 2005).

## AREA DESIGNATIONS

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the State Implementation Plan (SIP). Areas are classified as attainment or nonattainment areas for particular pollutants, depending on whether they meet ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

- **Unclassified:** a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- **Attainment:** a pollutant is in attainment if the CAAQS for that pollutant was not violated at any site in the area during a three-year period.
- **Nonattainment:** a pollutant is in nonattainment if there was at least one violation of a state AAQS for that pollutant in the area.
- **Nonattainment/Transitional:** a subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SoCAB is shown in Table 3, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*.

**Table 3 Attainment Status of Criteria Pollutants in the South Coast Air Basin**

| Pollutant | State | Federal |
|---|---|---|
| Ozone – 1-hour | Extreme Nonattainment | No Federal Standard |
| Ozone – 8-hour | Extreme Nonattainment | Extreme Nonattainment |
| $PM_{10}$ | Serious Nonattainment | Attainment |
| $PM_{2.5}$ | Nonattainment | Nonattainment[1] |
| CO | Attainment | Attainment |
| $NO_2$ | Attainment | Attainment/Maintenance |
| $SO_2$ | Attainment | Attainment |
| Lead | Attainment | Nonattainment (Los Angeles County only)[2] |
| All others | Attainment/Unclassified | Attainment/Unclassified |

Source: CARB 2025a.

[1] The SoCAB is pending a resignation request from nonattainment to attainment for the 24-hour federal $PM_{2.5}$ standards. The 2021 $PM_{2.5}$ Redesignation Request and Maintenance Plan demonstrates that the South Coast meets the requirements of the CAA to allow US EPA to redesignate the SoCAB to attainment for the 65 µg/m³ and 35 µg/m³ 24-hour $PM_{2.5}$ standards. CARB will submit the 2021 $PM_{2.5}$ Redesignation Request to the US EPA as a revision to the California SIP (CARB 2021).

[2] In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new 2008 federal AAQS as a result of large industrial emitters. Remaining areas for lead in the SoCAB are unclassified. However, lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011 (South Coast AQMD 2012). CARB's SIP revision was submitted to the EPA for approval.

## EXISTING AMBIENT AIR QUALITY

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are best documented by measurements taken by the South Coast AQMD. The project site is located within Source Receptor Area (SRA) 18: North Orange County Coastal. The air quality monitoring station closest to the proposed project is the Anaheim-Pampas Lane Monitoring Station, which is one of 31 monitoring stations South Coast AQMD operates and maintains within the SoCAB.[7] Data from this station includes $O_3$, $NO_2$, $PM_{10}$, and $PM_{2.5}$. Table 4, *Ambient Air Quality Monitoring Summary*, shows regular violations of the state and federal $O_3$, state $PM_{10}$ standards, and the federal $PM_{2.5}$ standards in the last three years.

**Table 4 Ambient Air Quality Monitoring Summary**

| Pollutant/Standard | Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations[1,2] | | |
|---|---|---|---|
| | 2022 | 2023 | 2024 |
| **Ozone ($O_3$)** | | | |
| State 1-Hour ≥ 0.09 ppm (days exceed threshold) | 0 | 1 | 0 |
| State & Federal 8-hour ≥ 0.070 ppm (days exceed threshold) | 0 | 1 | 2 |
| Max. 1-Hour Conc. (ppm) | 0.089 | 0.102 | 0.089 |
| Max. 8-Hour Conc. (ppm) | 0.068 | 0.076 | 0.076 |
| **Nitrogen Dioxide ($NO_2$)** | | | |
| State 1-Hour ≥ 0.18 ppm (days exceed threshold) | 0 | 0 | 0 |
| Max. 1-Hour Conc. (ppb) | 0.0671 | 0.0530 | 0.0509 |
| **Coarse Particulates ($PM_{10}$)** | | | |
| State 24-Hour > 50 µg/m$^3$ (days exceed threshold) | 1 | 1 | 1 |
| Federal 24-Hour > 150 µg/m$^3$ (days exceed threshold) | 0 | 0 | 0 |
| Max. 24-Hour Conc. (µg/m$^3$) | 63.6 | 67.0 | 99.4 |
| **Fine Particulates ($PM_{2.5}$)** | | | |
| Federal 24-Hour > 35 µg/m$^3$ (days exceed threshold) | 10 | 0 | 1 |
| Max. 24-Hour Conc. (µg/m$^3$) | 54.4 | 33.1 | 45.6 |

Source: CARB 2025d.
Notes: ppm = parts per million; ppb = parts per billion; µg/m$^3$ = micrograms per cubic meter; * = Data not available
[1] Data for $O_3$, $NO_2$, $PM_{2.5}$, and $PM_{10}$ from Anaheim-Pampas Lane Monitoring Station.
[2] Most recent data available as of November 2024.

## MULTIPLE AIR TOXICS EXPOSURE STUDY V

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on existing ambient concentrations of TACs and the potential health risks from air toxics in the SoCAB. In April 2021, South Coast AQMD released the latest update to the MATES study, MATES V. The first MATES analysis, MATES I, began in 1986 but was limited because of the technology available at the time. Conducted in 1998, MATES II was the first MATES iteration to include a comprehensive monitoring program, an air toxics emissions inventory, and

[7] Locations of the SRAs and monitoring stations are shown here: http://www.aqmd.gov/docs/default-source/default-document-library/map-of-monitoring-areas.pdf.

a modeling component. MATES III was conducted in 2004 to 2006, with MATES IV following in 2012 to 2013.

MATES V uses measurements taken during 2018 and 2019, with a comprehensive modeling analysis and emissions inventory based on 2018 data. The previous MATES studies quantified the cancer risks based on the inhalation pathway only. MATES V includes information on the chronic noncancer risks from inhalation and non-inhalation pathways for the first time. Cancer risks and chronic noncancer risks from MATES II through IV measurements have been re-examined using current Office of Environmental Health Hazards Assessment (OEHHA) and CalEPA risk assessment methodologies and modern statistical methods to examine the trends over time.

The MATES V study showed that cancer risk in the SoCAB decreased to 454 in a million from 997 in a million in the MATES IV study. Overall, air toxics cancer risk in the SoCAB decreased by 54 percent since 2012 when MATES IV was conducted. MATES V showed the highest risk locations near the Los Angeles International Airport and the Ports of Long Beach and Los Angeles. Diesel particulate matter continues to be the major contributor to air toxics cancer risk (approximately 72 percent of the total cancer risk). Goods movement and transportation corridors have the highest cancer risk. Transportation sources account for 88 percent of carcinogenic air toxics emissions, and the remainder is from stationary sources, which include large industrial operations such as refineries and power plants as well as smaller businesses such as gas stations and chrome-plating facilities. (South Coast AQMD 2021b).

### SENSITIVE RECEPTORS

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are also considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

## Thresholds of Significance

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in South Coast AQMD's *CEQA Air Quality Handbook* and the significance thresholds on South Coast AQMD's website (South Coast AQMD 1993). CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. South Coast AQMD has established thresholds of significance for regional air quality emissions for

construction activities and project operation. In addition to the daily thresholds listed above, projects are also subject to the AAQS. These are addressed though an analysis of localized CO impacts and localized significance thresholds (LSTs).

## REGIONAL SIGNIFICANCE THRESHOLDS

The South Coast AQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB. Table 5, *South Coast AQMD Significance Thresholds*, lists South Coast AQMD's regional significance thresholds that are applicable for all projects uniformly regardless of size or scope. There is growing evidence that although ultrafine particulates contribute a very small portion of the overall atmospheric mass concentration, they represent a greater proportion of the health risk from PM. However, the EPA or CARB have not yet adopted AAQS to regulate ultrafine particulates; therefore, South Coast AQMD has not developed thresholds for them.

**Table 5 South Coast AQMD Significance Thresholds**

| Air Pollutant | Construction Phase | Operational Phase |
|---|---|---|
| Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs) | 75 lbs/day | 55 lbs/day |
| Nitrogen Oxides ($NO_X$) | 100 lbs/day | 55 lbs/day |
| Carbon Monoxide (CO) | 550 lbs/day | 550 lbs/day |
| Sulfur Oxides ($SO_X$) | 150 lbs/day | 150 lbs/day |
| Particulates ($PM_{10}$) | 150 lbs/day | 150 lbs/day |
| Particulates ($PM_{2.5}$) | 55 lbs/day | 55 lbs/day |

Source: South Coast AQMD 2023a.

Projects that exceed the regional significance threshold contribute to the nonattainment designation of the SoCAB. The attainment designations are based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health. Exposure to fine particulate pollution and ozone causes myriad health impacts, particularly to the respiratory and cardiovascular systems:

- Linked to increased cancer risk ($PM_{2.5}$, TACs)
- Aggravates respiratory disease ($O_3$, $PM_{2.5}$)
- Increases bronchitis ($O_3$, $PM_{2.5}$)
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath ($O_3$)
- Reduces resistance to infections and increases fatigue ($O_3$)
- Reduces lung growth in children ($PM_{2.5}$)
- Contributes to heart disease and heart attacks ($PM_{2.5}$)
- Contributes to premature death ($O_3$, $PM_{2.5}$)
- Linked to lower birth weight in newborns ($PM_{2.5}$) (South Coast AQMD 2015a)

Exposure to fine particulates and ozone aggravates asthma attacks and can amplify other lung ailments such as emphysema and chronic obstructive pulmonary disease. Exposure to current levels of $PM_{2.5}$ is responsible for an estimated 4,300 cardiopulmonary-related deaths per year in the SoCAB. In addition, University of Southern

California scientists responsible for a landmark children's health study found that lung growth improved as air pollution declined for children aged 11 to 15 in five communities in the SoCAB (South Coast AQMD 2015b).

South Coast AQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the SoCAB and has established thresholds that would be protective of these individuals. To achieve the health-based standards established by the EPA, South Coast AQMD prepares an AQMP that details regional programs to attain the AAQS. Mass emissions thresholds shown in Table 5 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. These thresholds are based on the trigger levels for the federal New Source Review Program, which was created to ensure projects are consistent with attainment of health-based federal AAQS. Regional emissions from a single project do not trigger a regional health impact, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed previously. Projects that do not exceed the South Coast AQMD regional significance thresholds in Table 5 would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

If projects exceed the emissions levels presented in Table 5, then those emissions would cumulatively contribute to the nonattainment status of the air basin and would contribute to elevating health effects associated with these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions in Table 5, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment, because mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited previously.

South Coast AQMD has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health to address the issue raised in *Sierra Club v. County of Fresno* (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978. South Coast AQMD currently does not have methodologies that would provide the City with a consistent, reliable, and meaningful analysis to correlate specific health impacts that may result from a proposed project's mass emissions.[8] Ozone concentrations are dependent on a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities

[8] In April 2019, the Sacramento Metropolitan Air Quality Management District (SMAQMD) published an Interim Recommendation on implementing Sierra Club v. County of Fresno (2018) 6 Cal.5th 502 ("Friant Ranch") in the review and analysis of the proposed project under CEQA in Sacramento County. Consistent with the expert opinions submitted to the court in Friant Ranch by the San Joaquin Valley Air Pollution Control District (SJVAPCD) and South Coast AQMD, the SMAQMD guidance confirms the absence of an acceptable or reliable quantitative methodology that would correlate the expected criteria air pollutant emissions of projects to likely health consequences for people from project-generated criteria air pollutant emissions. The SMAQMD guidance explains that while it is in the process of developing a methodology to assess these impacts, lead agencies should follow the Friant Court's advice to explain in meaningful detail why this analysis is not yet feasible. Since this interim memorandum SMAQMD has provided methodology to address health impacts. However, a similar analysis is not available for projects within the South Coast AQMD region.

of predicting ground-level ozone concentrations in relation to the National and California AAQS, and the absence of modeling tools that could provide statistically valid data and meaningful additional information regarding health effects from criteria air pollutants generated by individual projects, it is not possible to link specific health risks to the magnitude of emissions exceeding the significance thresholds. However, if a project in the SoCAB exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until the attainment standards are met in the SoCAB.

## CO HOTSPOTS

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the SoCAB and in the state have steadily declined.

In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hotspot analysis conducted for the attainment by the South Coast AQMD for busiest intersections in Los Angeles during the peak morning and afternoon periods plan did not predict a violation of CO standards.[9] As identified in the South Coast AQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SoCAB in previous years, prior to redesignation, were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection to more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2023).[10]

[9] The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

[10] The CO hotspot analysis refers to the modeling conducted by the Bay Area Air Quality Management District for its CEQA Guidelines because it is based on newer data and considers the improvement in mobile-source CO emissions. Although meteorological conditions in the Bay Area differ from those in the Southern California region, the modeling conducted by BAAQMD demonstrates that the net increase in peak hour traffic volumes at an intersection in a single hour would need to be substantial. This finding is consistent with the CO hotspot analysis South Coast AQMD prepared as part of its 2003 AQMP to provide support in seeking CO attainment for the SoCAB. Based on the analysis prepared by South Coast AQMD, no CO hotspots were predicted for the SoCAB. As noted in the preceding footnote, the analysis included some of Los Angeles' busiest intersections, with daily traffic volumes of 100,000 or more peak hour vehicle trips operating at LOS E and F (South Coast AQMD 2003).

## LOCALIZED SIGNIFICANCE THRESHOLDS

The South Coast AQMD developed LSTs for emissions of $NO_2$, CO, $PM_{10}$, and $PM_{2.5}$ generated at the project site (offsite mobile-source emissions are not included in the LST analysis). LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS and are shown in Table 6, *South Coast AQMD Localized Significance Thresholds*.

**Table 6 South Coast AQMD Localized Significance Thresholds**

| Air Pollutant (Relevant AAQS) | Concentration |
|---|---|
| 1-Hour CO Standard (CAAQS) | 20 ppm |
| 8-Hour CO Standard (CAAQS) | 9.0 ppm |
| 1-Hour $NO_2$ Standard (CAAQS) | 0.18 ppm |
| Annual $NO_2$ Standard (CAAQS) | 0.03 ppm |
| 24-Hour $PM_{10}$ Standard – Construction (South Coast AQMD)[1] | 10.4 µg/m$^3$ |
| 24-Hour $PM_{2.5}$ Standard – Construction (South Coast AQMD)[1] | 10.4 µg/m$^3$ |
| 24-Hour $PM_{10}$ Standard – Operation (South Coast AQMD)[1] | 2.5 µg/m$^3$ |
| 24-Hour $PM_{2.5}$ Standard – Operation (South Coast AQMD)[1] | 2.5 µg/m$^3$ |

Source: South Coast AQMD 2023a.
ppm – parts per million; µg/m$^3$ – micrograms per cubic meter
[1] Threshold is based on South Coast AQMD Rule 403. Since the SoCAB is in nonattainment for $PM_{10}$ and $PM_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

To assist lead agencies, South Coast AQMD developed screening-level LSTs to back-calculate the mass amount (lbs. per day) of emissions generated onsite that would trigger the levels shown in Table 6 for projects under 5-acres. These "screening-level" LSTs tables are the localized significance thresholds for all projects of five acres and less; however, it can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required to compare concentrations of air pollutants generated by the project to the localized concentrations shown in Table 6.

In accordance with South Coast AQMD's LST methodology, the screening-level construction LSTs are based on the acreage disturbed per day based on equipment use. The screening-level construction LSTs for the project site in SRA 18 are shown in Table 7, *South Coast AQMD Screening-Level Localized Significance Thresholds,* for sensitive receptors within 82 feet (25 meters) for $NO_X$ and CO and 520 feet (158 meters) for $PM_{10}$ and $PM_{2.5}$.

**Table 7 South Coast AQMD Screening-Level Localized Significance Thresholds**

| | Threshold (lbs/day)[1] | | | |
|---|---|---|---|---|
| Acreage Disturbed | Nitrogen Oxides ($NO_X$) | Carbon Monoxide (CO) | Coarse Particulates ($PM_{10}$) | Fine Particulates ($PM_{2.5}$) |
| ≤1.00 Acre Disturbed Per Day | 92 | 647 | 42.79 | 16.60 |
| 1.31 Acre Disturbed Per Day | 104 | 745 | 45.29 | 17.72 |
| 3.50 Acre Disturbed Per Day | 164 | 1,336 | 62.09 | 24.07 |
| 4.00 Acre Disturbed Per Day | 175 | 1,461 | 65.85 | 25.36 |

Source: South Coast AQMD 2008, 2011, and 2023a.
[1] LSTs are based on sensitive receptors within 82 feet (25 meters) for $NO_X$ and CO and 520 feet (158 meters) for $PM_{10}$ and $PM_{2.5}$.

## HEALTH RISK

Whenever a project would require use of chemical compounds that have been identified in South Coast AQMD Rule 1401, placed on CARB's air toxics list pursuant to AB 1807, or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the South Coast AQMD. Table 8, *South Coast AQMD Toxic Air Contaminants Incremental Risk Thresholds*, lists the TAC incremental risk thresholds for operation of a project. The type of land uses that typically generate substantial quantities of criteria air pollutants and TACs from operations include industrial (stationary sources) and warehousing (truck idling) land uses (CARB 2005). As park and recreational uses do not use substantial quantities of TACs, these thresholds are typically applied to new industrial projects only. Additionally, the purpose of this environmental evaluation is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (Case No. S213478)).

**Table 8 South Coast AQMD Toxic Air Contaminants Incremental Risk Thresholds**

| | |
|---|---|
| Maximum Incremental Cancer Risk | ≥ 10 in 1 million |
| Hazard Index (project increment) | ≥ 1.0 |
| Cancer Burden in areas ≥ 1 in 1 million | > 0.5 excess cancer cases |

Source: South Coast AQMD 2023a.

### *Draft Operational Cumulative Health Risk Thresholds*

South Coast AQMD initiated a Working Group to identify cumulative health risk thresholds for development projects in order to address community concerns of health risk impacts of new projects being developed in areas where there is a higher pollution burden. The cumulative health risk threshold methodology first utilizes a screening approach to identify whether projects can qualitatively address cumulative health risk or quantitatively address health risk:

- **Low Cancer Risk Project Types**: Residential, commercial, recreational, educational, and retail.
- **Medium Cancer Risk Project Types**: Truck yards, gas stations, small industrial projects, and linear projects.
- **High Cancer Risk Project Types**. Industrial, major transportation projects (airports, port, railyard, bus/train station), and major planning projects.

For projects with low and medium cancer risks, like the proposed project, a quantitative analysis is not warranted. On the other hand, for projects that result in potentially high cancer risk impacts, a quantitative is recommended. Additionally, the project-level health risk threshold of 10 in a million is adjusted based on the underlying health risk of the zip code the project is within based on South Coast AQMD's MATES V mapping. MATES V is utilized. MATES V identifies a gradient of the effects of air pollution on cancer risk in the South

Coast AQMD Region, which is then used to adjust the project-level cancer risk levels as shown in Table 9, *MATES V Adjusted Cumulative Significant Cancer Risk Thresholds*.

**Table 9 MATES V Adjusted Cumulative Significant Cancer Risk Thresholds**

| Threshold Increment | MATES V Cancer Risk | Adjusted Cumulative Cancer Risk Threshold |
|---|---|---|
| A | Most Stringent | ≥ 1 in 1 million |
| B | >90th Percentile | ≥ 3 in 1 million |
| C | 90th Percentile to 50th Percentile | ≥ 5 in 1 million |
| D | 50th Percentile to 30th Percentile | ≥ 7 in 1 million |
| E | < 30th Percentile | ≥ 10 in 1 million |

Source: South Coast AQMD 2023b.

South Coast AQMD has also identified that the thresholds in Table 9 should be adjusted if any of the following criteria apply:

- **Criteria #1 – Post-2018 High Volume Diesel-Fueled Mobile Sources**. If there are post-2018 high volume highways or railroad mainlines, then increase the threshold increment by 1 (e.g., from step "D" to "C").
- **Criteria #2 – Post-2018 Projects with High Volume Diesel Fueled Trucks**. Post-2018 projects are not accounted for in MATES V. Therefore, if new warehousing projects along the truck route have been constructed, then increase the threshold increment by 1 (e.g., from D to C).
- **Criteria #3 – Sensitive Receptor Population**. If the project site is within an AB 617 community or within the 80th percentile of CES 4.0, then increase the threshold increment by 1(e.g., from D to C).

As mentioned previously, this type of project would be considered low to medium cancer risks; thus, an operational cancer risk analysis for the proposed project would not be warranted.

# GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,[11] carbon ($CO_2$), methane ($CH_4$), and ozone ($O_3$)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC

[11] Water vapor ($H_2O$) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

that contribute to global warming to a lesser extent include nitrous oxide ($N_2O$), sulfur hexafluoride ($SF_6$), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[12] The major GHG are briefly described below.

- **Carbon dioxide ($CO_2$)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane ($CH_4$)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.

- **Nitrous oxide ($N_2O$)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 10, *GHG Emissions and Their Relative Global Warming Potential Compared to $CO_2$*. The GWP is used to convert GHGs to $CO_2$-equivalence ($CO_2e$) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fifth Assessment Report (AR5) GWP values for $CH_4$, a project that generates 10 MT of $CH_4$ would be equivalent to 280 MT of $CO_2$.[13]

**Table 10 GHG Emissions and Their Relative Global Warming Potential Compared to $CO_2$**

| GHGs | Fourth Assessment Report (AR4) Global Warming Potential Relative to $CO_2$[1] | Fifth Assessment Report (AR5) Global Warming Potential Relative to $CO_2$[1] | Sixth Assessment Report (AR6) Global Warming Potential Relative to $CO_2$[1] |
|---|---|---|---|
| Carbon Dioxide ($CO_2$) | 1 | 1 | 1 |
| Methane[2] ($CH_4$) | 25 | 28 | 30 |
| Nitrous Oxide ($N_2O$) | 298 | 265 | 273 |

Source: IPCC 2007, 2013, and 2023.

Notes: The IPCC published updated GWP values in its Sixth Assessment Report (AR6) that reflect latest information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of $CO_2$. However, GWP values identified in AR5 are used by the 2022 Scoping Plan for long-term emissions forecasting.

1 Based on 100-year time horizon of the GWP of the air pollutant compared to $CO_2$.

2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of $CO_2$ is not included.

[12] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2017). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

[13] The global warming potential of a GHG is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

# GHG Regulatory Setting

## REGULATION OF GHG EMISSIONS ON A NATIONAL LEVEL

The US Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (US EPA 2009).

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—$CO_2$, $CH_4$, $N_2O$, hydrofluorocarbons, perfluorocarbons, and $SF_6$—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the project's GHG emissions inventory because they constitute the majority of GHG emissions and, per South Coast AQMD guidance, are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory. In response to President Trump's "Unleashing American Energy" Executive Order, published on January 20, 2025, the US EPA announced on March 12, 2025 of its intention to reconsider regulations and actions that rely on the Endangerment Finding.

### US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 MT or more of $CO_2$ per year are required to submit an annual report.

### Update to Corporate Average Fuel Economy Standards (2021 to 2035)

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. On March 30, 2020, the EPA finalized an updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021 to 2026.

On December 21, 2021, under direction of Executive Order (EO) 13990 issued by President Biden, the National Highway Traffic Safety Administration repealed Safer Affordable Fuel Efficient Vehicles Rule Part One, which had preempted state and local laws related to fuel economy standards. In addition, on March 31, 2022, the National Highway Traffic Safety Administration finalized new fuel standards in response to EO 13990. Fuel efficiency under the standards proposed will increase 8 percent annually for model years 2024 to 2025 and 10 percent annual for model year 2026. Overall, the new CAFE standards require a fleet average of 49 MPG for passenger vehicles and light trucks for model year 2026, which would be a 10 MPG increase relative to model year 2021 (NHTSA 2022).

On June 7, 2024, NHTSA, under the Biden Administration, announced final CAFE standards for passenger cars and light trucks built in model years 2027-2031 and final fuel efficiency standards for heavy-duty pickup trucks and vans built in model years 2030-2035. The final rules establish standards that would require an industry fleet-wide average of approximately 50.4 mpg for passenger cars and light trucks in model year 2031, by increasing fuel economy by 2 percent year over year for passenger cars (model years 2027-2031) and for light trucks (model years 2029-2031). For heavy-duty pickup trucks and vans, the final rule would increase fuel efficiency at a rate of 10 percent per year (model years 2030-2032) and 8 percent per year (model years 2033-2035) (NHTSA 2024).

On June 11, 2025, the NHTSA, under the Trump Administration, published the final rule, "Resetting the Corporate Average Fuel Economy Program." This interpretive rule issued by the NHTSA does not immediately change or reverse current fuel economy standards; however, the rule clarifies the NHTSA's interpretation of its obligations for CAFE standards stemming from the Energy Policy and Conservation Act of 1975 and the Energy Independence and Security Act of 2007. The rule asserts that some regulations, such as those established under previous presidential administrations, improperly considered electric vehicles (EVs) when identifying the "maximum feasibility" average fuel economy level upon which CAFE standards are developed, thereby establishing a legal foundation for future rollbacks of CAFE standards (NHTSA 2025).

### Multipollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles

In 2024, the USEPA issued a final rule, Multipollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, that sets new, more protective standards to reduce harmful air pollutant emissions from light-duty and medium-duty vehicles starting with model year 2027 (USEPA 2024a). The final rule builds on USEPA's final standards for federal GHG emissions standards for passenger cars and light trucks for model years 2023 through 2026 and leverages advances in clean car technology to help improve public health from vehicle emissions. These standards will phase in over model years 2027 through 2032. For light-duty vehicles, the standards are projected to result in an industry-wide average target for the light-duty fleet of 85 grams/mile (g/mile) of $CO_2$ in model year 2032, representing a nearly 50 percent reduction in projected fleet average emissions target levels relative to the existing model year 2026 standards (USEPA 2024b). The medium-duty vehicle standards are projected to result in an average target of 274 g/mile of $CO_2$ by model year 2032, representing a 44 percent reduction in projected fleet average emissions target levels relative to the existing model year 2026 standards (USEPA 2024b). Overall, USEPA projects that cumulative $CO_2$ reductions as a result of the new standards are approximately 7.2 billion metric tons over the life of the program (USEPA 2024b). Implementation of these standards is currently uncertain as the USEPA is currently reconsidering the 2009 endangerment finding and the related GHG emissions regulations.

## REGULATION OF GHG EMISSIONS ON A STATE LEVEL

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in EO S-03-05 and EO B-30-15, EO B-55-18, Assembly Bill 32 (AB 32), Senate Bill 32 (SB 32), AB 1279, and SB 375.

### Executive Order S-3-05

Executive Order S-3-05, signed June 1, 2005. Executive Order S-3-05 set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

### Assembly Bill 32, the Global Warming Solutions Act (2006)

AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in EO S-03-05. CARB prepared the 2008 Scoping Plan to outline a plan to achieve the GHG emissions reduction targets of AB 32.

### Executive Order B-30-15

EO B-30-15, signed April 29, 2015, set a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. EO B-30-15 also directed CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in EO S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, "Safeguarding California", in order to ensure climate change is accounted for in state planning and investment decisions.

### Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed SB 32 and AB 197 into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

### Executive Order B-55-18

Executive Order B-55-18, signed September 10, 2018, set a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive Order B-55-18 directs CARB to work with relevant state agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning that not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions should be offset by equivalent net removals of $CO_2e$ from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

### Assembly Bill 1279

AB 1279, signed by Governor Newsom in September 2022, codified the carbon neutrality targets of EO B-55-18 for year 2045 and sets a new legislative target for year 2045 of 85 percent below 1990 levels for

anthropogenic GHG emissions. SB 1279 also requires CARB to update the Scoping Plan to address these new targets.

***2022 Climate Change Scoping Plan***

CARB adopted the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on December 15, 2022, which lays out a path to achieve carbon neutrality by 2045 or earlier and to reduce the State's anthropogenic GHG emissions (CARB 2022). The Scoping Plan provides updates to the previously adopted 2017 Scoping Plan and addresses the carbon neutrality goals of EO B-55-18 (discussed below) and the ambitious GHG reduction target as directed by AB 1279. Previous Scoping Plans focused on specific GHG reduction targets for our industrial, energy, and transportation sectors—to meet 1990 levels by 2020, and then the more aggressive 40 percent below that for the 2030 target. The 2022 Scoping Plan updates the target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. Carbon neutrality takes it one step further by expanding actions to capture and store carbon including through natural and working lands and mechanical technologies, while drastically reducing anthropogenic sources of carbon pollution at the same time.

The path forward was informed by the recent Sixth Assessment Report (AR6) of the IPCC and the measures would achieve 85 percent below 1990 levels by 2045 in accordance AB 1279. CARB's 2022 Scoping Plan identifies strategies as shown in Table 11, *Priority Strategies for Local Government Climate Action Plans*, that would be most impactful at the local level for ensuring substantial process towards the State's carbon neutrality goals.

**Table 11 Priority Strategies for Local Government Climate Action Plans**

| Priority Area | Priority Strategies |
|---|---|
| Transportation Electrification | Convert local government fleets to zero-emission vehicles (ZEV) and provide EV charging at public sites. |
| | Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as building standards that exceed state building codes, permit streamlining, infrastructure siting, consumer education, preferential parking policies, and ZEV readiness plans). |
| VMT Reduction | Reduce or eliminate minimum parking standards. |
| | Implement Complete Streets policies and investments, consistent with general plan circulation element requirements. |
| | Increase access to public transit by increasing density of development near transit, improving transit service by increasing service frequency, creating bus priority lanes, reducing or eliminating fares, microtransit, etc. |
| | Increase public access to clean mobility options by planning for and investing in electric shuttles, bike share, car share, and walking |
| | Implement parking pricing or transportation demand management pricing strategies. |
| | Amend zoning or development codes to enable mixed-use, walkable, transit-oriented, and compact infill development (such as increasing allowable density of the neighborhood). |
| | Preserve natural and working lands by implementing land use policies that guide development toward infill areas and do not convert "greenfield" land to urban uses (e.g., green belts, strategic conservation easements) |
| Building Decarbonization | Adopt all-electric new construction reach codes for residential and commercial uses. |
| | Adopt policies and incentive programs to implement energy efficiency retrofits for existing buildings, such as weatherization, lighting upgrades, and replacing energy-intensive appliances and equipment with more efficient systems (such as Energy Star-rated equipment and equipment controllers). |

**Table 11 Priority Strategies for Local Government Climate Action Plans**

| Priority Area | Priority Strategies |
|---|---|
| | Adopt policies and incentive programs to electrify all appliances and equipment in existing buildings such as appliance rebates, existing building reach codes, or time of sale electrification ordinances. |
| | Facilitate deployment of renewable energy production and distribution and energy storage on privately owned land uses (e.g., permit streamlining, information sharing) . |
| | Deploy renewable energy production and energy storage directly in new public projects and on existing public facilities (e.g., solar photovoltaic systems on rooftops of municipal buildings and on canopies in public parking lots, battery storage systems in municipal buildings) . |

Source: CARB 2022.

Based on Appendix D of the 2022 CARB Climate Change Scoping Plan, for residential and mixed-use development projects, CARB recommends first demonstrating that these land use development projects are aligned with State climate goals based on the attributes of land use development that reduce operational GHG emissions while simultaneously advancing fair housing. Attributes that accommodate growth in a manner consistent with the GHG and equity goals of SB 32 have all the following attributes:

- Transportation Electrification
  - Provide EV charging infrastructure that, at a minimum, meets the most ambitious voluntary standards in the California Green Building Standards Code at the time of project approval.

- VMT Reduction
  - Is located on infill sites that are surrounded by existing urban uses and reuses or redevelops previously undeveloped or underutilized land that is presently served by existing utilities and essential public services (e.g., transit, streets, water, sewer).
  - Does not result in the loss or conversion of the State's natural and working lands;
  - Consists of transit-supportive densities (minimum of 20 residential dwelling units/acre), or is in proximity to existing transit stops (within a half mile), or satisfies more detailed and stringent criteria specified in the region's Sustainable Communities Strategy (SCS);
  - Reduces parking requirements by:
    - Eliminating parking requirements or including maximum allowable parking ratios (i.e., the ratio of parking spaces to residential units or square feet); or
    - Providing residential parking supply at a ratio of <1 parking space per dwelling unit; or
    - For multifamily residential development, requiring parking costs to be unbundled from costs to rent or own a residential unit.
  - At least 20 percent of the units are affordable to lower-income residents;

- Result in no net loss of existing affordable units.

- Building Decarbonization
  - Use all electric appliances without any natural gas connections and does not use propane or other fossil fuels for space heating, water heating, or indoor cooking (CARB 2022).

If the first approach to demonstrating consistency is not applicable (such as in the case of this school modernization project), the second approach to project-level alignment with state climate goals is to achieve net zero GHG emissions. The third approach to demonstrating project-level alignment with state climate goals is to align with GHG thresholds of significance, which many local air quality management (AQMDs) and air pollution control districts (APCDs) have developed or adopted (CARB 2022).

## Senate Bill 375

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPO). The SCAG is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 is defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 $MMTCO_2e$ of reductions by 2020 and 15 $MMTCO_2e$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

### *2017 Update to the SB 375 Targets*

CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018. The updated targets became effective in October2018. All SCSs adopted after October 1, 2018, are subject to these new targets. CARB's updated SB 375 targets for the SCAG region were an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent) (CARB 2018).

The targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of "percent per capita" reductions in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies, such as statewide road user pricing. The proposed targets call for greater per-capita GHG emission reductions from SB 375 than are currently in place, which for 2035 translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCSs to achieve the SB 375 targets. CARB foresees that the additional GHG emissions reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies (CARB 2018).

### *SCAG's Regional Transportation Plan / Sustainable Communities Strategy*

SB 375 requires each MPO to prepare a sustainable communities strategy in its regional transportation plan (RTP/SCS). For the SCAG region, the 2024-2050 RTP/SCS, Connect SoCal, was adopted on April 4, 2024, and is an update to the 2020-2045 RTP/SCS. In general, the RTP/SCS outlines a development pattern for the region that, when integrated with the transportation network and other transportation measures and policies, would reduce VMT from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

Connect SoCal focuses on the continued efforts of the previous RTP/SCSs to integrate transportation and land use strategies in development of the SCAG region through the horizon year 2050 (SCAG 2024). Connect SoCal forecasts that the SCAG region will meet its GHG per capita reduction targets of 8 percent by 2020 and 19 percent by 2035. It also forecasts that implementation of the plan will reduce VMT per capita in year 2050 by 6.3 percent compared to baseline conditions for that year. Connect SoCal includes a "Core Vision" that centers on maintaining and better managing the transportation network for moving people and goods, while expanding mobility choices by locating housing, jobs, and transit closer together; and increasing investments in transit and complete streets (SCAG 2024).

## Transportation Sector Specific Regulations

### *Assembly Bill 1493*

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles. (See also the discussion on the update to the Corporate Average Fuel Economy standards at the beginning of this Section 5.5.2 under "Federal.") In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's

Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less GHG emissions and 75 percent less smog-forming emissions.

### *Executive Order S-01-07*

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in $CO_2e$ gram per unit of fuel energy sold in California. The LCFS required a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and uses market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

### *Executive Order B-16-2012*

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are ZE by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions to 80 percent below 1990 levels.

### *Executive Order N-79-20*

On September 23, 2020, Governor Newsom signed Executive Order N-79-20, whose goal is that 100 percent of in-state sales of new passenger cars and trucks will be ZE by 2035. Additionally, the fleet goals for trucks are that 100 percent of drayage trucks are ZE by 2035, and 100 percent of medium- and heavy-duty vehicles in the state are ZE by 2045, where feasible. The Executive Order's goal for the State is to transition to 100 percent ZE off-road vehicles and equipment by 2035, where feasible. Advanced Clean Cars II (ACC II) approved by CARB on August 25, 2022, codified the zero-emission vehicle transition goal established under EO-N-79-20 and set low-emission and zero-emission vehicle standards for model year 2026 through 2035 vehicles. However, on May 22, 2025, the U.S. Senate voted to revoke the waiver granted by the Biden administration for the ACC II program through congressional resolution (House Joint Resolution 88). On June 12, 2025, President Trump signed the resolution, which formally nullified ACC II. Currently, implementation of ACC II is unknown.

## Renewables Portfolio: Carbon Neutrality Regulations

### *Senate Bills 1078, 107, and X1-2 and Executive Order S-14-08*

A major component of California's Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at

least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the state's renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

### *Senate Bill 350*

Senate Bill 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

### *Senate Bill 100*

On September 10, 2018, Governor Brown signed SB 100. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

### *Senate Bill 1020*

SB 1020 was signed into law on September 16, 2022. It requires renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent by 2040. Additionally, SB 1020 requires all State agencies to procure 100 percent of electricity from renewable energy and zero-carbon resources by 2035.

## Energy Efficiency Regulations

### *California Building Code: Building Energy Efficiency Standards*

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods.

On August 11, 2021, the CEC adopted the 2022 Building Energy Efficiency Standards, which were subsequently approved by the California Building Standards Commission in December 2021. The 2022 standards went into effect on January 1, 2023, replacing the existing 2019 standards. The 2022 standards would require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings

such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers (CEC 2022). The 2025 Building Energy Efficiency Standards were adopted September 24, 2024, and will become effective and replace the 2022 Building Energy Efficiency Standards on January 1, 2026. Updates under the 2025 Building Energy Efficiency Standards include electric-ready requirements for some multi-family buildings and commercial kitchens and solar and battery energy storage requirements for assembly buildings including religious worship, sports, and recreational buildings.

### *California Building Code: CALGreen*

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[14] The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2025. The 2025 CALGreen standards become effective January 1, 2026..

### *2006 Appliance Efficiency Regulations*

The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

### *Solid Waste Diversion Regulations*

#### ***AB 939: Integrated Waste Management Act of 1989***

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code §§ 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

#### ***AB 341***

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

[14] The green building standards became mandatory in the 2010 edition of the code.

#### *AB 1327*

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code §§ 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

#### *AB 1826*

In October of 2014, Governor Brown signed AB 1826 requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses and multifamily residential dwellings with five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed with food waste.

### *Water Efficiency Regulations*

#### *SBX7-7*

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 required urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

#### *AB 1881: Water Conservation in Landscaping Act*

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or an equivalent. AB 1881 also requires the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

### *Short-Lived Climate Pollutant Reduction Strategy*

#### *Senate Bill 1383*

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and $CH_4$. Black carbon is the light-absorbing component of fine particulate matter produced during the incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane

by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Short-Lived Climate Pollutant Reduction Strategy, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use (CARB 2017). In-use on-road rules were expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020. South Coast AQMD is one of the air districts that requires air pollution control technologies for chain-driven broilers, which reduces particulate emissions from these charbroilers by over 80 percent (CARB 2017). Additionally, South Coast AQMD Rule 445 limits installation of new fireplaces in the South Coast Air Basin.

## CALIFORNIA'S GREENHOUSE GAS SOURCES AND RELATIVE CONTRIBUTION

In 2024, the statewide GHG emissions inventory was updated for 2000 to 2022 emissions using the GWPs in IPCC's AR4 and reported that California produced 371.1 $MMTCO_2e$ GHG emissions in 2022 (59.9 $MMTCO_2e$ below the 2020 GHG Limit of 431 $MMTCO_2e$), a 9.3 $MMTCO_2e$ decrease (2.4 percent) from the 380.4 $MMTCO_2e$ generated in 2021 (CARB 2024b). The decrease in statewide emissions from 2021 to 2022 likely reflects stabilization from the effects of the COVID-19 pandemic and a return to the general established long-term downward trend in GHG emissions for California.

California's transportation sector was the single-largest generator of GHG emissions, producing 37.7 percent of the state's total emissions. Industrial sector emissions made up 19.6 percent, and electric power generation made up 16.1 percent of the state's emissions inventory. Other major sectors of GHG emissions include residential and commercial (10.6 percent), agriculture and forestry (8.0 percent), high GWP (5.7 percent), and recycling and waste (2.2 percent) (CARB 2024b).

Since the peak level in 2004, California's GHG emissions have generally followed a decreasing trend. In 2014, statewide GHG emissions dropped below the 2020 GHG Limit (AB 32 target for year 2020) and have remained below the limit since that time.

Transportation emissions decreased by 5.2 $MMTCO_2e$ (3.6 percent) from 2021, primarily due to a greater share of fuels used for on-road transportation being produced from non-fossil resources (CARB 2024b). Electricity emissions also decreased compared to 2021 by 2.6 $MMTCO_2e$ (4.1 percent) despite an increase in overall energy demand. The decrease in electricity sector emissions is due to the continued growth of in-state solar generation and increases to in-state hydropower and imported wind power in addition to a general decrease in fossil gas-powered generation (CARB 2024b). High-GWP emissions have continued to increase as high-GWP gases replace ozone-depleting substances being phased out under the 1987 Montreal Protocol. Overall trends in the inventory also continue to demonstrate that the carbon intensity of California's economy (i.e., the amount of carbon pollution per million dollars of gross state product) is declining. From 2000 to 2022, the carbon intensity of California's economy decreased by 54.8 percent while the gross state product increased by 77.5 percent (CARB 2024b).

## Thresholds of Significance

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

3. The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions.[15]

### SOUTH COAST AQMD WORKING GROUP

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, South Coast AQMD convened a GHG CEQA Significance Threshold Working Group (Working Group). The South Coast AQMD Working Group (Meeting No. 15) identified a tiered approach for evaluating GHG emissions for development projects where South Coast AQMD is not the lead agency (South Coast AQMD 2010):

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

- **Tier 3.** If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.

  For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, South Coast AQMD requires an assessment of GHG emissions. The South Coast AQMD Working Group identified a screening-level threshold of 3,000 $MTCO_2e$ annually for all land use types or the following land-use-specific thresholds: 1,400 $MTCO_2e$ for commercial projects, 3,500 $MTCO_2e$ for residential projects, or 3,000 $MTCO_2e$ for mixed-use projects. These bright-line thresholds are based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified

[15] The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions:

- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

  The South Coast AQMD Working Group has identified an efficiency target for projects that exceed the screening threshold of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan level projects (e.g., program-level projects such as general plans) for the year 2020.[16] The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.

The bright-line screening-level criterion of 3,000 $MTCO_2e$/yr is used as the significance threshold for this project. Therefore, if the project operation-phase emissions exceed the 3,000 $MTCO_2e$/yr threshold, GHG emissions would be considered potentially significant in the absence of mitigation measures.

[16] It should be noted that the Working Group also considered efficiency targets for 2035 for the first time in this Working Group meeting.

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## CalEEMod Inputs- Peterson Elementary School Field Lighting Project, Construction

| | |
|---|---|
| **Name:** | Peterson Elementary School Field Lighting Project |
| **Project Number:** | HBCS-07 |
| **Project Location:** | 20661 Farnsworth Lane, Huntington Beach |
| **County:** | Orange |
| **Climate Zone:** | 7 |
| **Land Use Setting:** | Urban |
| **Operational Year:** | 2026 |
| **Utility Company:** | Southern California Edison |
| **Air Basin:** | South Coast Air Basin |
| **Air District:** | South Coast AQMD |
| **SRA:** | 18 - North Orange County Coastal |

**Disturbed Site Acreage** 0.069

| Project Components | SQFT | Acres |
|---|---|---|
| ***Construction*** | | |
| Number of Light Poles | 3 | 0.0001 |
| Area Disturbed per Light Pole | 1,000 | 0.0230 |
| **Area Disturbed (Light Poles)** | **3,000** | **0.069** |
| | **TOTAL ACREAGE** | **0.069** |

### 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 | 3.00 | 1000sf | 0.069 | NA | 0 |
| | | | | **0.069** | | |

**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 |

**Southern California Edison Carbon Intensity Factors**

| | | |
|---|---|---|
| Forecasted Year | 2027 | |
| CO2:[1,2] | 531.98 | pounds per megawatt hour |
| CH4:[3] | 0.033 | pound per megawatt hour |
| N2O:[3] | 0.004 | pound per megawatt hour |

**Architecutral Coating**[1]

| Land Use Subtype | Square Feet for Architectural Coating |
|---|---|
| Other Non-Asphalt Surfaces | 180 |

[1] Based on CalEEMod defaults.

## Construction Activities and Schedule Assumptions

* based on schedule provided by District

### Construction Schedule (CalEEMod)

| Construction Activities | Start Date | End Date | CalEEMod Duration (Workday) |
|---|---|---|---|
| Demolition | 6/22/2026 | 7/6/2026 | 11 |
| Site Preparation | 7/7/2026 | 7/8/2026 | 2 |
| Grading | 7/9/2026 | 7/11/2026 | 2 |
| Building Construction | 7/12/2026 | 11/29/2026 | 100 |
| Paving | 11/30/2026 | 12/7/2026 | 6 |
| Architectural Coating | 12/8/2026 | 12/15/2026 | 6 |

### Revised Construction Schedule (CalEEMod)

| Construction Activities | Start Date | End Date | CalEEMod Duration (Workday) |
|---|---|---|---|
| Site Preparation | 6/22/2026 | 6/23/2026 | 2 |
| Trenching | 6/24/2026 | 7/1/2026 | 6 |
| Field Lighting Installation | 7/2/2026 | 9/14/2026 | 53 |
| Paving | 9/15/2026 | 9/22/2026 | 6 |
| Architectural Coating | 9/15/2026 | 9/22/2026 | 6 |

## CalEEMod Construction Off-Road Equipment Inputs

Source: CalEEMod defualts (except where noted).

| Construction Equipment Details | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **# of Equipment** | **hr/day** | **hp** | **load factor*** | **total trips per day** |
| **Site Preparation** | | | | | |
| Scrapers | 1 | 8 | 423 | 0.48 | |
| Worker Trips | | | | | 3 |
| Vendor Trips | | | | | 1 |
| Hauling Trips | | | | | 0 |
| Water Trucks | Acres Disturbed: | 1 | | | 6 |
| | Onsite Travel (mi/day): | 0.83 | | | |
| **Uiility Trenching** | | | | | |
| Tractors/Loaders/Backhoes | 1 | 8 | 84 | 0.37 | |
| Bore/Drill Rig | 1 | 8 | 83 | 0.5 | |
| Worker Trips | | | | | 5 |
| Vendor Trips | | | | | 0 |
| Hauling Trips | | | | | 0 |
| Water Trucks | Acres Disturbed: | 0.5 | | | 4 |
| | Onsite Travel (mi/day): | 0.41 | | | |
| **Building Construction (Field Lighting Installation)** | | | | | |
| Cranes | 1 | 4 | 367 | 0.29 | |
| Worker Trips | | | | | 3 |
| Vendor Trips | | | | | 0 |
| Hauling Trips | | | | | 0 |
| **Paving** | | | | | |
| Cement and Mortar Mixers | 1 | 6 | 10 | 0.56 | |
| Worker Trips | | | | | 3 |
| Vendor Trips | | | | | 2 |
| Hauling Trips | | | | | 0 |
| **Architectural Coating** | | | | | |
| Air Compressors | 1 | 6 | 37 | 0.48 | |
| Worker Trips | | | | | 3 |
| 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. 2022, 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- Peterson Elementary School Field Lighting Project, Operation

**Name:** Peterson Elementary School Field Lighting Project
**Project Number:** HBCS-07
**Project Location:** 20661 Farnsworth Lane, Huntington Beach
**County:** Orange
**Climate Zone:** 7
**Land Use Setting:** Urban
**Operational Year:** 2026
**Utility Company:** Southern California Edison
**Air Basin:** South Coast Air Basin
**Air District:** South Coast AQMD
**SRA:** 18 - North Orange County Coastal

**Disturbed Site Acreage** 0.069

## 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 | 3.00 | 1000SF | 0.069 | NA | 0 |
| | | | | **0.069** | | |

**Trips**

| Land Use Type | Average Daily Trips (Weekdays) | CalEEMod Trip Rate | Average Daily Trips (Saturday) | CalEEMod Trip Rate |
|---|---|---|---|---|
| **Elementary School** | 71 | **23.67** | 71 | **23.67** |

**Source:** DJ&A. Ocobter 2025. Peterson Elementary Field Lighting Project Traffic Impact Study.
**Note:** No scheduled programming or activities are anticipated to occur on Sundays and therefore no trips were modeled for Sundays.

**Water Use**
Student capacity is not anticipated to change from existing school capacity. Additionally, the proposed project is limited to field lighting and does not involve uses that would require water. Therefore, water use would be be similar to existing conditions and was not added to the model.

**Solid Waste**
Student capacity is not anticipated to change from existing school capacity. Additionally, the proposed project is limited to field lighting and does not involve uses that would generate solid waste. Therefore, water use would be be similar to existing conditions and was not added to the model.

**Lighting Electricity (Use)**

**Electricity:**

| | Total kW [1] | Timing of Activities | Estimated Hours of Operation per day[2,3] | Days per Year | Hours per Year | KWh (Annual) |
|---|---|---|---|---|---|---|
| Fall Festival | 2.42 | 4:30 pm –7:30 pm | 4 | 1 | 4 | 8 |
| Spring Fling | 2.42 | 4:30 pm –7:30 pm | 4 | 1 | 5 | 11 |
| Peterson ES PTA After School Programs[4] | 2.42 | 3:00 pm – 5:00 pm | 0.5 | 8 | 4 | 10 |
| YMCA After School Programs[5] | 2.42 | 3:00 pm – 6:00 pm | 1.5 | 260 | 390 | 942 |
| AYSO Games/Practices (Weekdays)[6] | 2.42 | 4:00 pm – 9:00 pm | 4.5 | 104 | 468 | 1,130 |
| | | | | | **Total Annual kWh** | **2,101** |

**Calculation of GHGs from Field Lighting**

| $CO_2$ [7] | $CH_4$ [7] | $N_2O$ [7] | $CO_2e$ | $CO_2e$ |
|---|---|---|---|---|
| lbs/Mwh | lbs/MWh | lbs/MWh | lbs/MWh | MT/KWh |
| 346.20 | 0.033 | 0.004 | 348.21 | 0.0002 |

| | |
|---|---|
| **$CO_2e$ from Lighting (MT/Year)** | **0.33** |

**Notes**

[1] Based on Lighting Plan for the proposed lighting as provided by the District (805W per light pole)

[2] Based on information provided by District (see Table 1 of the IS/MND).

[3] Lighting use is only assumed from 4:30 PM onwards. Therefore activities that end before 4:30 PM are not listed here and the portion of activities that start before 4:30 PM are not incorporated into the calculations.

[4] PTA after school programs are assumed to use the proposed lighting at the Peterson ES soccer field 1 day a week, 8 weeks a year consistent with the 2025 schedule for programs using the soccer field. (Source: https://petersonpta.org/after-school-programs)

[5] YMCA after school programs are conservatively assumed to occur every week of the year.

[6] AYSO practices and games are anticipated to last from the first week of August to the last week of February (26 total weeks) consistent with the current schedule for AYSO Region 56- Huntington Beach (Source: https://ayso.bluesombrero.com/Default.aspx?tabid=855281)

[7] Based on Southern California Edison forecasted factors for year 2026 and IPCC AR4 global warming potentials.

**Southern California Edison Carbon Intensity Factors**

| Forecasted Year | 2026 | |
|---|---|---|
| CO2:[1,2] | 346.20 | pounds per megawatt hour |
| CH4:[3] | 0.033 | pound per megawatt hour |
| N2O:[3] | 0.004 | pound per megawatt hour |

**Notes:**

[1] Based on CO2e intensity factor of 452 pounds per megawatt hour; Southern California Edison. 2022. 2021 Sustainability Report. https://www.edison.com/home/sustainability/sustainability-report.html

[2] Based on Intergovernmental Panel on Climate Change Fourth Assessment Report global warming potentials for CH4 and N2O;

[3] CalEEMod default values.

CalEEMod Default Fleet Mix -- Year 2026

Total ADTs: _____

| | HHD | LDA | LDT1 | LDT2 | LHD1 | LHD2 | MCY | MDV | MH | MHD | OBUS | SBUS | UBUS | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FleetMix (Model Default) | 1.682440 | 47.266594 | 3.376431 | 21.127310 | 3.344775 | 0.878114 | 2.060654 | 18.288706 | 0.304671 | 1.372823 | 0.060826 | 0.190473 | 0.046184 | 100 |
| FleetMix (Model Default) | 0.016824 | 0.472666 | 0.033764 | 0.211273 | 0.033448 | 0.008781 | 0.020607 | 0.182887 | 0.003047 | 0.013728 | 0.000608 | 0.001905 | 0.000462 | 100% |
| Trips | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Percent | 2% | 96% | | | | | | | 2% | | | | | 100% |
| | | | | | | | | | | | | | | |
| Proportion | 1.000000 | 0.490610 | 0.035046 | 0.219294 | 0.034718 | 0.009114 | 0.021389 | 0.189830 | 0.154266 | 0.695108 | 0.030798 | 0.096443 | 0.023385 | |
| Assumed Mix | 0.00% | 86.67% | | | | | | | 13.33% | | | | | 100.00% |
| | | | | | | | | | | | | | | |
| adjusted with Assumed | 0.000000 | 0.425195 | 0.030373 | 0.190054 | 0.030089 | 0.007899 | 0.018537 | 0.164519 | 0.000000 | 0.000000 | 0.000000 | 0.133333 | 0.000000 | 100% |
| Trips | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0% | 43% | 3% | 19% | 3% | 1% | 2% | 16% | 0% | 0% | 0% | 13% | 0% | 100% |
| Modified | 0.000000 | 0.425195 | 0.030373 | 0.190054 | 0.030089 | 0.007899 | 0.018537 | 0.164519 | 0.000000 | 0.000000 | 0.000000 | 0.133333 | 0.000000 | 100.0% |
| Final Check Trips | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0.00% | 87% | | | | | | | 13% | | | | | |
| Adjusted CalEEMod Inputs | 0 | 42.5194959766369000 | 3.0373276005409000 | 19.0054438323995000 | 3.0088511996770900 | 0.7899232958204720 | 1.8536972437561600 | 16.4519275178356000 | 0 | 0 | 0 | 13.3333333333333000 | 0 | |

# Peterson Elementary School Field Lighting Project (Construction) Custom Report

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# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Peterson Elementary School Field Lighting Project (Construction) |
| Construction Start Date | 6/22/2026 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 2.5 |
| Precipitation (days) | 19 |
| Location | 20661 Farnsworth Ln, Huntington Beach, CA 92646, USA |
| County | Orange |
| City | Huntington Beach |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 5801 |
| EDFZ | 7 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.32 |

## 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 | 3.0 | 1000sqft | 0.07 | 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. | 0.86 | 0.72 | 6.5 | 5.8 | 0.02 | 0.24 | 0.88 | 1.1 | 0.23 | 0.11 | 0.33 | — | 2,151 | 2,151 | 0.09 | 0.05 | 0.69 | 2,168 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.05 | 0.04 | 0.35 | 0.38 | < 0.005 | 0.01 | 0.02 | 0.03 | 0.01 | < 0.005 | 0.02 | — | 109 | 109 | < 0.005 | < 0.005 | 0.02 | 110 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.01 | 0.01 | 0.06 | 0.07 | < 0.005 | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 18 | 18 | < 0.005 | < 0.005 | < 0.005 | 18 |

### 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 | 0.86 | 0.72 | 6.5 | 5.8 | 0.02 | 0.24 | 0.88 | 1.1 | 0.23 | 0.11 | 0.33 | — | 2,151 | 2,151 | 0.09 | 0.05 | 0.69 | 2,168 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2026 | 0.05 | 0.04 | 0.35 | 0.38 | < 0.005 | 0.01 | 0.02 | 0.03 | 0.01 | < 0.005 | 0.02 | — | 109 | 109 | < 0.005 | < 0.005 | 0.02 | 110 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2026 | 0.01 | 0.01 | 0.06 | 0.07 | < 0.005 | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 18 | 18 | < 0.005 | < 0.005 | < 0.005 | 18 |

# 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 | 0.84 | 0.70 | 6.2 | 5.5 | 0.02 | 0.24 | — | 0.24 | 0.22 | — | 0.22 | — | 1,894 | 1,894 | 0.08 | 0.02 | — | 1,900 |
| Dust From Material Movement | — | — | — | — | — | — | 0.41 | 0.41 | — | 0.04 | 0.04 | — | — | — | — | — | — | — |
| Onsite truck | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | 0.37 | 0.37 | < 0.005 | 0.04 | 0.04 | — | 4.9 | 4.9 | < 0.005 | < 0.005 | 0.01 | 5.2 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.03 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 10 | 10 | < 0.005 | < 0.005 | — | 10 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | — | 0.03 | 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 | — | 1.7 | 1.7 | < 0.005 | < 0.005 | — | 1.7 |
| 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 | 0.01 | 0.01 | 0.01 | 0.13 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 33 | 33 | < 0.005 | < 0.005 | 0.11 | 33 |
| Vendor | 0.02 | < 0.005 | 0.22 | 0.11 | < 0.005 | < 0.005 | 0.06 | 0.06 | < 0.005 | 0.02 | 0.02 | — | 220 | 220 | 0.01 | 0.03 | 0.57 | 230 |
| 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 | — | 0.17 | 0.17 | < 0.005 | < 0.005 | < 0.005 | 0.17 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.2 | 1.2 | < 0.005 | < 0.005 | < 0.005 | 1.3 |
| 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 | < 0.005 | < 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 | — | 0.20 | 0.20 | < 0.005 | < 0.005 | < 0.005 | 0.21 |
| 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 |

## 3.3. 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 | 0.22 | 0.19 | 1.7 | 1.5 | < 0.005 | 0.07 | — | 0.07 | 0.06 | — | 0.06 | — | 495 | 495 | 0.02 | < 0.005 | — | 497 |
| 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 | 0.03 | 0.03 | 0.25 | 0.22 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 72 | 72 | < 0.005 | < 0.005 | — | 72 |
| 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 | < 0.005 | 0.05 | 0.04 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 12 | 12 | < 0.005 | < 0.005 | — | 12 |
| 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 | 0.01 | 0.01 | 0.01 | 0.16 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.01 | 0.01 | — | 39 | 39 | < 0.005 | < 0.005 | 0.14 | 40 |
| 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 | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 5.5 | 5.5 | < 0.005 | < 0.005 | 0.01 | 5.5 |
| 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 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 0.91 | 0.91 | < 0.005 | < 0.005 | < 0.005 | 0.92 |
| 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 |

## 3.5. 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 | 0.05 | 0.04 | 0.31 | 0.24 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 42 | 42 | < 0.005 | < 0.005 | — | 42 |
| Paving | 0.00 | 0.00 | — | — | — | — | — | — | —A-54 | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.69 | 0.69 | < 0.005 | < 0.005 | — | 0.70 |
| 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 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.11 | 0.11 | < 0.005 | < 0.005 | — | 0.12 |
| 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 | 0.01 | 0.01 | 0.01 | 0.13 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 33 | 33 | < 0.005 | < 0.005 | 0.11 | 33 |
| Vendor | < 0.005 | < 0.005 | 0.06 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 63 | 63 | < 0.005 | 0.01 | 0.16 | 66 |
| 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 | — | 0.52 | 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 | — | 1.0 | 1.0 | < 0.005 | < 0.005 | < 0.005 | 1.1 |
| 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 | — | 0.17 | 0.17 | < 0.005 | < 0.005 | < 0.005 | 0.18 |
| 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. Architectural Coating (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 | 0.15 | 0.12 | 0.86 | 1.1 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 0.14 | 0.14 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 | 0.01 | 0.02 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.2 | 2.2 | < 0.005 | < 0.005 | — | 2.2 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Architectural | < 0.005 | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.36 | 0.36 | < 0.005 | < 0.005 | — | 0.36 |
| Architectural Coatings | < 0.005 | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 | 0.01 | 0.01 | 0.01 | 0.16 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.01 | 0.01 | — | 39 | 39 | < 0.005 | < 0.005 | 0.14 | 40 |
| Vendor | < 0.005 | < 0.005 | 0.06 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 63 | 63 | < 0.005 | 0.01 | 0.16 | 66 |
| 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 | — | 0.62 | 0.62 | < 0.005 | < 0.005 | < 0.005 | 0.63 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.0 | 1.0 | < 0.005 | < 0.005 | < 0.005 | 1.1 |
| 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 | — | 0.10 | 0.10 | < 0.005 | < 0.005 | < 0.005 | 0.10 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.17 | 0.17 | < 0.005 | < 0.005 | < 0.005 | 0.18 |
| 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. 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 | 0.23 | 0.19 | 2.2 | 4.3 | 0.01 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 675 | 675 | 0.03 | 0.01 | — | 677 |
| Onsite truck | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | 0.19 | 0.19 | < 0.005 | 0.02 | 0.02 | — | 3.3 | 3.3 | < 0.005 | < 0.005 | < 0.005 | 3.5 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.04 | 0.07 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 11 | 11 | < 0.005 | < 0.005 | — | 11 |
| Onsite truck | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.05 | 0.05 | < 0.005 | < 0.005 | < 0.005 | 0.06 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 1.8 | 1.8 | < 0.005 | < 0.005 | — | 1.8 |
| 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 | 0.02 | 0.02 | 0.02 | 0.26 | 0.00 | 0.00 | 0.07 | 0.07 | 0.00 | 0.02 | 0.02 | — | 65 | 65 | < 0.005 | < 0.005 | 0.23 | 66 |
| Vendor | 0.01 | < 0.005 | 0.13 | 0.06 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 125 | 125 | 0.01 | 0.02 | 0.32 | 131 |
| 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 | — | 1.0 | 1.0 | < 0.005 | < 0.005 | < 0.005 | 1.0 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.1 | 2.1 | < 0.005 | < 0.005 | < 0.005 | 2.2 |
| 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 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 0.17 | 0.17 | < 0.005 | < 0.005 | < 0.005 | 0.17 |
| 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 |

# 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 | 6/22/2026 | 6/23/2026 | 5.0 | 2.0 | — |
| Field Lighting Installation | Building Construction | 7/2/2026 | 9/14/2026 | 5.0 | 53 | — |
| Paving | Paving | 9/15/2026 | 9/22/2026 | 5.0 | 6.0 | — |
| Architectural Coating | Architectural Coating | 9/15/2026 | 9/22/2026 | 5.0 | 6.0 | — |
| Trenching | Trenching | 6/24/2026 | 7/1/2026 | 5.0 | 6.0 | — |

## 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 |
|---|---|---|---|---|---|---|---|
| Site Preparation | Scrapers | Diesel | Average | 1.00 | 8.0 | 423 | 0.48 |
| Field Lighting Installation | Cranes | Diesel | Average | 1.00 | 4.0 | 367 | 0.29 |
| Paving | Cement and Mortar Mixers | Diesel | Average | 1.00 | 6.0 | 10.0 | 0.56 |
| Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.0 | 37 | 0.48 |
| Trenching | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.0 | 84 | 0.37 |
| Trenching | Bore/Drill Rigs | Diesel | Average | 1.00 | 8.0 | 83 | 0.50 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Site Preparation | Worker | 2.5 | 19 | LDA,LDT1,LDT2 |
| Site Preparation | Vendor | 7.0 | 10 | HHDT,MHDT |
| Site Preparation | Hauling | 0.00 | 20 | HHDT |
| Site Preparation | Onsite truck | 1.00 | 1.00 | HHDT |
| Field Lighting Installation | Worker | 3.0 | 19 | LDA,LDT1,LDT2 |
| Field Lighting Installation | Vendor | 0.00 | 10 | HHDT,MHDT |
| Field Lighting Installation | Hauling | 0.00 | 20 | HHDT |
| Field Lighting Installation | Onsite truck | — | — | HHDT |
| Paving | Worker | 2.5 | 19 | LDA,LDT1,LDT2 |
| Paving | Vendor | 2.0 | 10 | HHDT,MHDT |
| Paving | Hauling | 0.00 | 20 | HHDT |
| Paving | Onsite truck | — | — | HHDT |
| Architectural Coating | Worker | 3.0 | 19 | LDA,LDT1,LDT2 |
| Architectural Coating | Vendor | 2.0 | 10 | HHDT,MHDT |

| | | | | |
|---|---|---|---|---|
| Architectural Coating | Hauling | 0.00 | 20 | HHDT |
| Architectural Coating | Onsite truck | — | — | HHDT |
| Trenching | Worker | 5.0 | 19 | LDA,LDT1,LDT2 |
| Trenching | Vendor | 4.0 | 10 | HHDT,MHDT |
| Trenching | Hauling | 0.00 | 20 | HHDT |
| Trenching | Onsite truck | 1.00 | 0.50 | 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 | 0.00 | 0.00 | 180 |

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (cy) | Material Exported (cy) | Acres Graded (acres) | Material Demolished (sq. ft.) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Site Preparation | — | — | 2.0 | 0.00 | 0.00 |
| Paving | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 |

### 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

| Phase Name | Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|---|
| Paving | Other Non-Asphalt Surfaces | 0.07 | 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 |

# 8. User Changes to Default Data

## 8.1. Justifications

| Screen | Justification |
|---|---|
| Construction: Construction Phases | Adjusted to conform with project schedule |
| Construction: Off-Road Equipment | Adjusted to match project construction equipment assumptions |
| Construction: Trips and VMT | Adjusted to conform with project assumptions |

# Peterson Elementary School Field Lighting Project (Operation) Custom Report

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8.1. Justifications

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Peterson Elementary School Field Lighting Project (Operation) |
| Operational Year | 2026 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 2.5 |
| Precipitation (days) | 19 |
| Location | 20661 Farnsworth Ln, Huntington Beach, CA 92646, USA |
| County | Orange |
| City | Huntington Beach |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 5801 |
| EDFZ | 7 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.32 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| Elementary School | 3.0 | 1000sqft | 0.07 | 0.00 | 0.00 | 0.00 | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

# 2. Emissions Summary

### 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. | 0.52 | 0.22 | 0.56 | 2.9 | 0.01 | < 0.005 | 0.50 | 0.50 | < 0.005 | 0.13 | 0.13 | 0.00 | 680 | 680 | 0.29 | 0.05 | 1.9 | 703 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.52 | 0.22 | 0.59 | 2.8 | 0.01 | < 0.005 | 0.50 | 0.50 | < 0.005 | 0.13 | 0.13 | 0.00 | 662 | 662 | 0.29 | 0.05 | 0.05 | 683 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.44 | 0.19 | 0.52 | 2.4 | < 0.005 | < 0.005 | 0.42 | 0.42 | < 0.005 | 0.11 | 0.11 | 0.00 | 571 | 571 | 0.25 | 0.04 | 0.70 | 590 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.08 | 0.03 | 0.09 | 0.44 | < 0.005 | < 0.005 | 0.08 | 0.08 | < 0.005 | 0.02 | 0.02 | 0.00 | 95 | 95 | 0.04 | 0.01 | 0.12 | 98 |

### 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 | 0.52 | 0.22 | 0.56 | 2.9 | 0.01 | < 0.005 | 0.50 | 0.50 | < 0.005 | 0.13 | 0.13 | — | 680 | 680 | 0.29 | 0.05 | 1.9 | 703 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Area | 0.00 | 0.00 | 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 | 0.52 | 0.22 | 0.56 | 2.9 | 0.01 | < 0.005 | 0.50 | 0.50 | < 0.005 | 0.13 | 0.13 | 0.00 | 680 | 680 | 0.29 | 0.05 | 1.9 | 703 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.52 | 0.22 | 0.59 | 2.8 | 0.01 | < 0.005 | 0.50 | 0.50 | < 0.005 | 0.13 | 0.13 | — | 662 | 662 | 0.29 | 0.05 | 0.05 | 683 |
| Area | 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 | 0.52 | 0.22 | 0.59 | 2.8 | 0.01 | < 0.005 | 0.50 | 0.50 | < 0.005 | 0.13 | 0.13 | 0.00 | 662 | 662 | 0.29 | 0.05 | 0.05 | 683 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.44 | 0.19 | 0.52 | 2.4 | < 0.005 | < 0.005 | 0.42 | 0.42 | < 0.005 | 0.11 | 0.11 | — | 571 | 571 | 0.25 | 0.04 | 0.70 | 590 |
| Area | 0.00 | 0.00 | 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 | 0.44 | 0.19 | 0.52 | 2.4 | < 0.005 | < 0.005 | 0.42 | 0.42 | < 0.005 | 0.11 | 0.11 | 0.00 | 571 | 571 | 0.25 | 0.04 | 0.70 | 590 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.08 | 0.03 | 0.09 | 0.44 | < 0.005 | < 0.005 | 0.08 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 95 | 95 | 0.04 | 0.01 | 0.12 | 98 |
| Area | 0.00 | 0.00 | 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 | 0.03 | 0.09 | 0.44 | < 0.005 | < 0.005 | 0.08 | 0.08 | < 0.005 | 0.02 | 0.02 | 0.00 | 95 | 95 | 0.04 | 0.01 | 0.12 | 98 |

# 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Elementary School | 0.52 | 0.22 | 0.56 | 2.9 | 0.01 | < 0.005 | 0.50 | 0.50 | < 0.005 | 0.13 | 0.13 | — | 680 | 680 | 0.29 | 0.05 | 1.9 | 703 |
| Total | 0.52 | 0.22 | 0.56 | 2.9 | 0.01 | < 0.005 | 0.50 | 0.50 | < 0.005 | 0.13 | 0.13 | — | 680 | 680 | 0.29 | 0.05 | 1.9 | 703 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Elementary School | 0.52 | 0.22 | 0.59 | 2.8 | 0.01 | < 0.005 | 0.50 | 0.50 | < 0.005 | 0.13 | 0.13 | — | 662 | 662 | 0.29 | 0.05 | 0.05 | 683 |
| Total | 0.52 | 0.22 | 0.59 | 2.8 | 0.01 | < 0.005 | 0.50 | 0.50 | < 0.005 | 0.13 | 0.13 | — | 662 | 662 | 0.29 | 0.05 | 0.05 | 683 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Elementary School | 0.08 | 0.03 | 0.09 | 0.44 | < 0.005 | < 0.005 | 0.08 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 95 | 95 | 0.04 | 0.01 | 0.12 | 98 |
| Total | 0.08 | 0.03 | 0.09 | 0.44 | < 0.005 | < 0.005 | 0.08 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 95 | 95 | 0.04 | 0.01 | 0.12 | 98 |

## 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Consum Products | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 | 0.00 | 0.00 | 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 Products | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Consumer Products | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 | 0.00 | 0.00 | 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Elementary School | — | — | — | — | — | — | — | — | — | — | — | 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Elementary School | — | — | — | — | — | — | — | — | — | — | — | 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 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Elementary School | — | — | — | — | — | — | — | — | — | — | — | 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Elementary School | — | — | — | — | — | — | — | — | — | — | — | 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Elementary School | — | — | — | — | — | — | — | — | — | — | — | 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 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Elementary School | — | — | — | — | — | — | — | — | — | — | — | 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

## 5.9. 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 |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Elementary School | 71 | 71 | 0.00 | 22,213 | 693 | 693 | 0.00 | 216,760 |

## 5.10. Operational Area Sources

### 5.10.1. Hearths

| Land Use | Hearth Type | Unmitigated (number) | Mitigated (number) |
|---|---|---|---|
| Elementary School | Wood Fireplaces | 0 | 0 |
| Elementary School | Gas Fireplaces | 0 | 0 |
| Elementary School | Propane Fireplaces | 0 | 0 |
| Elementary School | Electric Fireplaces | 0 | 0 |
| Elementary School | No Fireplaces | 0 | 0 |
| Elementary School | Conventional Wood Stoves | 0 | 0 |
| Elementary School | Catalytic Wood Stoves | 0 | 0 |
| Elementary School | Non-Catalytic Wood Stoves | 0 | 0 |
| Elementary School | Pellet Wood Stoves | 0 | 0 |

### 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) |
|---|---|---|---|---|---|
| undefined | 0.00 | 0.00 | 0.00 | 0.00 | — |

### 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

## 5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|---|---|---|
| Elementary School | 0.00 | 0.00 |

## 5.13. Operational Waste Generation

5.13.1. Unmitigated

| Land Use | Waste (ton/year) | Cogeneration (kWh/year) |
|---|---|---|
| Elementary School | 0.00 | 0.00 |

## 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

## 8.1. Justifications

| Screen | Justification |
|---|---|
| Land Use | No building square footage |
| Operations: Vehicle Data | Updated based on ADT generated for project traffic report |
| Operations: Fleet Mix | Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles that the regional VMT. |
| Operations: Energy Use | Energy use associated with lighting use is incorporated off-model |
| Operations: Water and Waste Water | Student capacity is not anticipated to change from existing school capacity. Additionally, the proposed project is limited to field lighting and does not involve uses that would require water. Therefore, water use would be be similar to existing conditions and was not added to the model. |
| Operations: Solid Waste | Student capacity is not anticipated to change from existing school capacity. Additionally, the proposed project is limited to field lighting and does not involve uses that would generate solid waste. Therefore, water use would be be similar to existing conditions and was not added to the model. |
| Operations: Refrigerants | No refrigerants would be used as part of the proposed project |

## Regional Construction Emissions Worksheet:

**3.1. Site Preparation (2026) - Unmitigated**

| | | ROG | NOx | CO | $SO_2$ | PM10 Total | PM2.5Total |
|---|---|---|---|---|---|---|---|
| Onsite | **Summer** | | | | | | |
| | Off-Road Equipment | 0.70 | 6.20 | 5.50 | 0.02 | 0.24 | 0.22 |
| | Dust From Material Movement | 0.00 | 0.00 | 0.00 | 0.00 | 0.41 | 0.04 |
| | Onsite truck | < 0.005 | 0.02 | 0.01 | < 0.005 | 0.37 | 0.04 |
| | **Total** | **0.70** | **6.22** | **5.51** | **0.02** | **1.02** | **0.30** |
| Offsite | | | | | | | |
| | Worker | 0.01 | 0.01 | 0.13 | 0.00 | 0.03 | 0.01 |
| | Vendor | < 0.005 | 0.22 | 0.11 | < 0.005 | 0.06 | 0.02 |
| | Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | **Total** | **0.01** | **0.23** | **0.24** | **0.00** | **0.09** | **0.03** |
| ***TOTAL*** | | ***1*** | ***6*** | ***6*** | ***0*** | ***1*** | ***0*** |

**3.3. Field Lighting Installation (2026) - Unmitigated**

| | | ROG | NOx | CO | $SO_2$ | PM10 Total | PM2.5Total |
|---|---|---|---|---|---|---|---|
| Onsite | **Summer** | | | | | | |
| | Off-Road Equipment | 0.19 | 1.70 | 1.50 | < 0.005 | 0.07 | 0.06 |
| | Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | **Total** | **0.19** | **1.70** | **1.50** | **0.00** | **0.07** | **0.06** |
| Offsite | | | | | | | |
| | Worker | 0.01 | 0.01 | 0.16 | 0.00 | 0.04 | 0.01 |
| | 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** | **0.01** | **0.01** | **0.16** | **0.00** | **0.04** | **0.01** |
| ***TOTAL*** | | ***0*** | ***2*** | ***2*** | ***0*** | ***0*** | ***0*** |

**3.5. Paving (2026) - Unmitigated**

| | | ROG | NOx | CO | $SO_2$ | PM10 Total | PM2.5Total |
|---|---|---|---|---|---|---|---|
| Onsite | **Summer** | | | | | | |
| | Off-Road Equipment | 0.04 | 0.31 | 0.24 | < 0.005 | 0.01 | 0.01 |
| | 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** | **0.04** | **0.31** | **0.24** | **0.00** | **0.01** | **0.01** |
| Offsite | | | | | | | |
| | Worker | 0.01 | 0.01 | 0.13 | 0.00 | 0.03 | 0.01 |
| | Vendor | < 0.005 | 0.06 | 0.03 | < 0.005 | 0.02 | 0.01 |
| | Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | **Total** | **0.01** | **0.07** | **0.16** | **0.00** | **0.05** | **0.02** |
| ***TOTAL*** | | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** |

**3.7. Architectural Coating (2026) - Unmitigated**

| | | ROG | NOx | CO | $SO_2$ | PM10 Total | PM2.5Total |
|---|---|---|---|---|---|---|---|
| Onsite | **Summer** | | | | | | |
| | Off-Road Equipment | 0.12 | 0.86 | 1.10 | < 0.005 | 0.02 | 0.02 |
| | Architectural Coatings | 0.14 | 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** | **0.26** | **0.86** | **1.10** | **0.00** | **0.02** | **0.02** |
| Offsite | | | | | | | |
| | Worker | 0.01 | 0.01 | 0.16 | 0.00 | 0.04 | 0.01 |
| | Vendor | < 0.005 | 0.06 | 0.03 | < 0.005 | 0.02 | 0.01 |
| | Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | **Total** | **0.01** | **0.07** | **0.19** | **0.00** | **0.06** | **0.02** |
| ***TOTAL*** | | ***0*** | ***1*** | ***1*** | ***0*** | ***0*** | ***0*** |

**3.9. Trenching (2026) - Unmitigated**

| | | ROG | NOx | CO | $SO_2$ | PM10 Total | PM2.5Total |
|---|---|---|---|---|---|---|---|
| Onsite | **Summer** | | | | | | |
| | Off-Road Equipment | 0.19 | 2.20 | 4.30 | 0.01 | 0.06 | 0.06 |
| | Onsite truck | < 0.005 | 0.02 | 0.01 | < 0.005 | 0.19 | 0.02 |
| | **Total** | **0.19** | **2.22** | **4.31** | **0.01** | **0.25** | **0.08** |
| Offsite | | | | | | | |
| | Worker | 0.02 | 0.02 | 0.26 | 0.00 | 0.07 | 0.02 |
| | Vendor | < 0.005 | 0.13 | 0.06 | < 0.005 | 0.04 | 0.01 |
| | Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | **Total** | **0.02** | **0.15** | **0.32** | **0.00** | **0.11** | **0.03** |
| ***TOTAL*** | | ***0*** | ***2*** | ***5*** | ***0*** | ***0*** | ***0*** |

## Construction LST Worksheet:

| 3.1. Site Preparation (2026) - Unmitigated | | | | |
|---|---|---|---|---|
| | NOx | CO | PM10 Total | PM2.5Total |
| Onsite | | | | |
| Off-Road Equipment | 6.20 | 5.50 | 0.24 | 0.22 |
| Dust From Material Movement | 0.00 | 0.00 | 0.41 | 0.04 |
| Onsite truck | 0.02 | 0.01 | 0.37 | 0.04 |
| **Total** | **6.22** | **5.51** | **1.02** | **0.30** |

| 3.3. Field Lighting Installation (2026) - Unmitigated | | | | |
|---|---|---|---|---|
| | NOx | CO | PM10 Total | PM2.5Total |
| Onsite | | | | |
| Off-Road Equipment | 0.19 | 1.70 | 0.00 | 0.00 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.19** | **1.70** | **0.00** | **0.00** |

| 3.5. Paving (2026) - Unmitigated | | | | |
|---|---|---|---|---|
| | NOx | CO | PM10 Total | PM2.5Total |
| Onsite | | | | |
| Off-Road Equipment | 0.31 | 0.24 | 0.01 | 0.01 |
| Paving | 0.00 | 0.00 | 0.00 | 0.00 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.31** | **0.24** | **0.01** | **0.01** |

| 3.9. Trenching (2026) - Unmitigated | | | | |
|---|---|---|---|---|
| | NOx | CO | PM10 Total | PM2.5Total |
| Onsite | | | | |
| Off-Road Equipment | 2.20 | 4.30 | 0.06 | 0.06 |
| Onsite truck | 0.02 | 0.01 | 0.19 | 0.02 |
| **Total** | **2.22** | **4.31** | **0.25** | **0.08** |

| | NOx | CO | PM10 Total | PM2.5 Total |
|---|---|---|---|---|
| *Site Preparation* | *6* | *6* | *1.02* | *0.30* |
| *≤ 1.00 Acre LST* | *92* | *647* | *4.00* | *3.00* |
| *Exceeds LST?* | *no* | *no* | *no* | *no* |
| *Field Lighting Installation* | *6* | *7* | *1.02* | *0.30* |
| *≤ 1.00 Acre LST* | *92* | *647* | *4.00* | *3.00* |
| *Exceeds LST?* | *no* | *no* | *no* | *no* |
| *Paving* | *0* | *2* | *0.00* | *0.00* |
| *≤ 1.00 Acre LST* | *92* | *647* | *4.00* | *3.00* |
| *Exceeds LST?* | *no* | *no* | *no* | *no* |
| *Trenching* | *2* | *4* | *0.25* | *0.08* |
| *≤ 1.00 Acre LST* | *92* | *647* | *4.00* | *3.00* |
| *Exceeds LST?* | *no* | *no* | *no* | *no* |

## Regional Operation Emissions Worksheet

[1] CalEEMod, Version 2022.1.

**Proposed Project**

**Summer**

| | ROG | NOx | CO | SO2 | PM10 Total | PM2.5 Total |
|---|---|---|---|---|---|---|
| Mobile | 0.22 | 0.56 | 2.90 | 0.01 | 0.50 | 0.13 |
| Area | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.22** | **0.56** | **2.90** | **0.01** | **0.50** | **0.13** |

**Winter**

| | ROG | NOx | CO | SO2 | PM10 Total | PM2.5 Total |
|---|---|---|---|---|---|---|
| Mobile | 0.22 | 0.59 | 2.80 | 0.01 | 0.50 | 0.13 |
| Area | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.22** | **0.59** | **2.80** | **0.01** | **0.50** | **0.13** |

**Max Daily**

| | ROG | NOx | CO | SO2 | PM10 Total | PM2.5 Total |
|---|---|---|---|---|---|---|
| Mobile | 0 | 1 | 3 | 0 | 1 | 0 |
| Area | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | **0** | **1** | **3** | **0** | **1** | **0** |
| **Regional Thresholds (lb/day)** | **55** | **55** | **550** | **150** | **150** | **55** |
| Exceeds Thresholds? | No | No | No | No | No | No |

# GHG Emissions Inventory

**Construction**[1]

| | $MTCO_2e$ |
|---|---|
| 2025 | 18 |
| **Total Construction** | **18** |
| **30-Year Amortization**[2] | **1** |

[1] CalEEMod, Version 2022.1.

[2] Total construction emissions are amortized over 30 years per SCAQMD methodology; SCAQMD. 2009, November 19. Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group Meeting 14. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-14/ghg-meeting-14-main-presentation.pdf?sfvrsn=2.

**Operation**[1]

| | $MTCO_2e$/Year[2] | |
|---|---|---|
| | **Operations** | **%** |
| Mobile | 98.00 | 99% |
| Area | 0.00 | 0% |
| Water | 0.00 | 0% |
| Solid Waste | 0.00 | 0% |
| Energy - Field Lighting[3] | 0.25 | 0% |
| 30-Year Construction Amortization | 0.60 | 1% |
| | **99** | 100% |

| | |
|---|---|
| South Coast AQMD Bright-Line Screening Threshold | **3,000** |
| **Exceed Threshold?** | **No** |

[1] CalEEMod, Version 2022.1.

[2] MTCO2e=metric tons of carbon dioxide equivalent.

[3] Calculated field lighting off-model based on average hours of lighting per event.

# Appendix B Native American Heritage Commission: Sacred Lands File Search

# Appendix

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# NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
**Reginald Pagaling**
*Chumash*

VICE-CHAIRPERSON
**Buffy McQuillen**
*Yokayo Pomo, Yuki, Nomlaki*

SECRETARY
**Sara Dutschke**
*Miwok*

PARLIAMENTARIAN
**Wayne Nelson**
*Luiseño*

COMMISSIONER
**Isaac Bojorquez**
*Ohlone-Costanoan*

COMMISSIONER
**Stanley Rodriguez**
*Kumeyaay*

COMMISSIONER
**Reid Milanovich**
*Cahuilla*

COMMISSIONER
**Bennae Calac**
*Pauma-Yuima Band of Luiseño Indians*

COMMISSIONER
**Vacant**

ACTING EXECUTIVE SECRETARY
**Steven Quinn**

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

May 7, 2025

Angel Castro
Placeworks, Inc.

Via Email to: acastro@placeworks.com

**Re: Peterson Elementary School Field Lighting Project, Orange County**

To Whom It May Concern:

As requested, a record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed based on information submitted for the above referenced project. The results were negative. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. As such, a SLF search is not a substitute for consultation with all tribes that are traditionally and culturally affiliated with a project's geographic area.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. Please contact all of those listed; if they cannot supply information, they may recommend others with specific knowledge. If within two weeks of notification, a response has not been received, the Commission requests that you follow-up with a telephone call or email to ensure that the project information was received.

If you receive notification of a change of address or phone number from a tribe, please notify the NAHC so that we can assure that our lists contain current information.

In addition to engaging in tribal consultation, you should consult the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center to determine whether it has information regarding the presence of recorded archaeological sites within the project area.

If you have any questions or need additional information, please contact me at Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
*Cultural Resources Analyst*

Attachment

# Appendix C Noise Fundamentals

# Appendix

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# NOISE FUNDAMENTALS

# Fundamentals of Noise

## NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

### Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).

- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second ($1x10^{-6}$ in/sec).

- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Equivalent Continuous Noise Level ($L_{eq}$); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the $L_{eq}$ metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level ($L_n$).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the $L_{50}$ level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The $L_{10}$ level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The $L_{90}$ is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

- **Maximum Sound Level ($L_{max}$)**. The highest RMS sound level measured during the measurement period.
- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.
- **Day-Night Sound Level ($L_{dn}$ or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and $L_{dn}$ values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the $L_{dn}$ value). As a matter of practice, $L_{dn}$ and CNEL values are interchangeable and are treated as equivalent in this assessment.
- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

## Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

### *Amplitude*

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

| Change in dB | Noise Level |
|---|---|
| ± 3 dB | Barely perceptible increase |
| ± 5 dB | Readily perceptible increase |
| ± 10 dB | Twice or half as loud |
| ± 20 dB | Four times or one-quarter as loud |

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

*Frequency*

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

*Duration*

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called $L_{eq}$), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the $L_{50}$ noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the $L_2$, $L_8$ and $L_{25}$ values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the $L_{min}$ and $L_{max}$. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level ($L_{dn}$). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00

PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The $L_{dn}$ descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or $L_{dn}$ metrics are commonly applied to the assessment of roadway and airport-related noise sources.

## Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

## Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2 Typical Noise Levels

| Common Outdoor Activities | Noise Level (dBA) | Common Indoor Activities |
|---|---|---|
| Onset of physical discomfort | 120+ | |
| | | |
| | 110 | Rock Band (near amplification system) |
| Jet Flyover at 1,000 feet | | |
| | 100 | |
| Gas Lawn Mower at three feet | | |
| | 90 | |
| Diesel Truck at 50 feet, at 50 mph | | Food Blender at 3 feet |
| | 80 | Garbage Disposal at 3 feet |
| Noisy Urban Area, Daytime | | |
| | 70 | Vacuum Cleaner at 10 feet |
| Commercial Area | | Normal speech at 3 feet |
| Heavy Traffic at 300 feet | 60 | |
| | | Large Business Office |
| Quiet Urban Daytime | 50 | Dishwasher Next Room |
| | | |
| Quiet Urban Nighttime | 40 | Theater, Large Conference Room (background) |
| Quiet Suburban Nighttime | | |
| | 30 | Library |
| Quiet Rural Nighttime | | Bedroom at Night, Concert Hall (background) |
| | 20 | |
| | | Broadcast/Recording Studio |
| | 10 | |
| | | |
| Lowest Threshold of Human Hearing | 0 | Lowest Threshold of Human Hearing |
| | | |

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

## Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the

square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 3 Human Reaction to Typical Vibration Levels

| Vibration Level, PPV (in/sec) | Human Reaction | Effect on Buildings |
|---|---|---|
| 0.006–0.019 | Threshold of perception, possibility of intrusion | Vibrations unlikely to cause damage of any type |
| 0.08 | Vibrations readily perceptible | Recommended upper level of vibration to which ruins and ancient monuments should be subjected |
| 0.10 | Level at which continuous vibration begins to annoy people | Virtually no risk of "architectural" (i.e. not structural) damage to normal buildings |
| 0.20 | Vibrations annoying to people in buildings | Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings |
| 0.4–0.6 | Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges | Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage |

Source: California Department of Transportation (Caltrans). 2020, April. *Transportation and Construction Vibration Guidance Manual.* Prepared by ICF International.

# Measurement Report

## Report Summary

| | | | |
|---|---|---|---|
| Meter's File Name | LxT_Data.064.s | Computer's File Name | LxT_0005424-20250319 163353-LxT_Data.064.ldbin |
| Meter | LxT1 0005424 | Firmware | 2.404 |
| User | AC | Location | ST-1 |
| Job Description | HBCS-7.0 | | |
| Note | | | |

| | | | | | |
|---|---|---|---|---|---|
| Start Time | 2025-03-19 17:33:53 | Duration | 0:15:00.0 | | |
| End Time | 2025-03-19 17:48:53 | Run Time | 0:15:00.0 | Pause Time | 0:00:00.0 |
| Pre-Calibration | 2025-03-19 14:46:02 | Post-Calibration | None | Calibration Deviation | --- |

## Results

### Overall Metrics

| | | | |
|---|---|---|---|
| $LA_{eq}$ | 55.2 dB | | |
| LAE | 84.7 dB | SEA | --- dB |
| EA | 33.1 µPa²h | | |
| EA8 | 1.1 mPa²h | | |
| EA40 | 5.3 mPa²h | | |
| $LAS_{peak}$ | 92.6 dB | 2025-03-19 17:34:46 | |
| $LAS_{max}$ | 72.5 dB | 2025-03-19 17:34:46 | |
| $LAS_{min}$ | 48.6 dB | 2025-03-19 17:44:27 | |
| $LA_{eq}$ | 55.2 dB | | |
| $LC_{eq}$ | 64.3 dB | $LC_{eq}$ - $LA_{eq}$ | 9.1 dB |
| $LAI_{eq}$ | 60.0 dB | $LAI_{eq}$ - $LA_{eq}$ | 4.8 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 |
| $L_{eq}$ | 55.2 dB | | --- dB | | --- dB | |
| $LS_{(max)}$ | 72.5 dB | 2025-03-19 17:34:46 | --- dB | None | --- dB | None |
| $LS_{(min)}$ | 48.6 dB | 2025-03-19 17:44:27 | --- dB | None | --- dB | None |
| $L_{Peak(max)}$ | 92.6 dB | 2025-03-19 17:34:46 | --- dB | None | --- dB | None |

### Overloads

| Count | Duration |
|---|---|
| 0 | 0:00:00.0 |

### Statistics

| | |
|---|---|
| LAS 2.0 | 60.1 dB |
| LAS 8.0 | 57.2 dB |
| LAS 25.0 | 55.0 dB |
| LAS 50.0 | 53.3 dB |
| LAS 90.0 | 50.9 dB |
| LAS 99.0 | 49.6 dB |

Project Name: _____ Date: 3/19/25

Project Number: HBCS-7.0 Monitoring Personnel: AC

Monitoring Site #: ST #1 Time Start: 5:34 End: 5:49

Site Location/Address: Rear Alley/acess Road of 8132 & 8122 Indianapolis Ave.

Primary Noise Source: Soccer practice (yelling, whistle, hitting soccer ball), Vehicle & motorcycle traffic in the distance @ SR-39

| Measurement Results | |
|---|---|
| Percentiles | dBA |
| Leq | 55.2 |
| Lmax | 72.5 |
| Lmin | 48.6 |
| L2 | 60.4 |
| L8 | 57.2 |
| L25 | 55.0 |
| L50 | 53.3 |
| Other | |
| SEL/CNEL | |

| Observed Noise Sources/Events | | |
|---|---|---|
| Time | Noise Source Event | dBA |
| 5:34 | Car drive by alley | 72 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Data File: 64 ☒ Photos: Yes

Comments (sound walls, height, etc..) 6 ft cinder block wall to the rear; 61.8m from 6ft raised walkway/wall (Drainage channel) West with aprox 3ft steel walls

| Max Wind Velocity (knots/hr) | Average Wind Velocity (knots/hr) | Temperature (F) | Relative Humidity (%) |
|---|---|---|---|
| | 9 mph | 68 | 40% |

Traffic counts in both directions:

| Roadway | # Lanes | Posted Speed | Autos | MD | HD |
|---|---|---|---|---|---|
| | | | | | |

**Calibration**

*Note, for ST measurements, calibration is only necessary before and after each monitoring period per day per meter - not before and after every ST measurement in that day. So only fill out calibration info on one ST sheet unless using two different meters for ST's.*

LD CAL 200 ☐ SN-14280 ☒ SN-14279 1 kHz Tone Reference Level: ☒ 94 dB ☐ 114 dB

Calibration Offset Prior: -0.73 Offset After: 94 dB

Caltone File Before: File #_____ Caltone File Before: File #_____

*Additional Notes:*

# Measurement Report

## Report Summary

| | | | |
|---|---|---|---|
| Meter's File Name | LxT_Data.065.s | Computer's File Name | LxT_0005424-20250319 165536-LxT_Data.065.ldbin |
| Meter | LxT1 0005424 | Firmware | 2.404 |
| User | AC | Location | ST-2 |
| Job Description | HBCS -7.0 | | |
| Note | | | |

| | | | | | |
|---|---|---|---|---|---|
| Start Time | 2025-03-19 17:55:36 | Duration | 0:15:00.0 | | |
| End Time | 2025-03-19 18:10:36 | Run Time | 0:15:00.0 | Pause Time | 0:00:00.0 |
| Pre-Calibration | 2025-03-19 16:46:02 | Post-Calibration | None | Calibration Deviation | --- |

## Results

### Overall Metrics

| | | | |
|---|---|---|---|
| $LA_{eq}$ | 53.9 dB | | |
| LAE | 83.4 dB | SEA | --- dB |
| EA | 24.5 µPa²h | | |
| EA8 | 785.5 µPa²h | | |
| EA40 | 3.9 mPa²h | | |
| $LAS_{peak}$ | 89.0 dB | 2025-03-19 18:06:48 | |
| $LAS_{max}$ | 63.7 dB | 2025-03-19 18:00:03 | |
| $LAS_{min}$ | 47.3 dB | 2025-03-19 18:07:21 | |
| $LA_{eq}$ | 53.9 dB | | |
| $LC_{eq}$ | 66.1 dB | $LC_{eq}$ - $LA_{eq}$ | 12.2 dB |
| $LAI_{eq}$ | 56.0 dB | $LAI_{eq}$ - $LA_{eq}$ | 2.1 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 |
| $L_{eq}$ | 53.9 dB | | --- dB | | --- dB | |
| $L_{S(max)}$ | 63.7 dB | 2025-03-19 18:00:03 | --- dB | None | --- dB | None |
| $L_{S(min)}$ | 47.3 dB | 2025-03-19 18:07:21 | --- dB | None | --- dB | None |
| $L_{Peak(max)}$ | 89.0 dB | 2025-03-19 18:06:48 | --- dB | None | --- dB | None |

### Overloads

| Count | Duration |
|---|---|
| 0 | 0:00:00.0 |

### Statistics

| | |
|---|---|
| LAS 2.0 | 60.4 dB |
| LAS 8.0 | 56.9 dB |
| LAS 25.0 | 54.6 dB |
| LAS 50.0 | 52.1 dB |
| LAS 90.0 | 49.4 dB |
| LAS 99.0 | 47.9 dB |

Project Name: _____ Date: 3/19/25

Project Number: HBCS - 7.0 Monitoring Personnel: dbc

Monitoring Site #: ST-2 Time Start: 5:55 End: 6:10

Site Location/Address: At the end of the Driftwood Drive cul-de-sac

Primary Noise Source: Distant Vehicle noise on Beach Boulevard/State Route 39 (SR39); nearby house work (hammer hitting / Drill (etc.))

| Measurement Results | |
|---|---|
| Percentiles | dBA |
| Leq | 53.9 |
| Lmax | 63.7 |
| Lmin | 47.3 |
| L2 | 60.4 |
| L8 | 56.9 |
| L25 | 54.6 |
| L50 | 52.1 |
| Other | |
| SEL/CNEL | |

| Observed Noise Sources/Events | | |
|---|---|---|
| Time | Noise Source Event | dBA |
| 6:00 pm | Small plane overhead | 63 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Data File: 65 ☒ Photos: yes

Comments (sound walls, height, etc..) 6ft raised walkway / wall on drainage channel

| Max Wind Velocity (knots/hr) | Average Wind Velocity (knots/hr) | Temperature (F) | Relative Humidity (%) |
|---|---|---|---|
| | 9mph | 65 | 40% |

Traffic counts in both directions:

| Roadway | # Lanes | Posted Speed | Autos | MD | HD |
|---|---|---|---|---|---|
| | | | | | |

## Calibration

*Note, for ST measurements, calibration is only necessary before and after each monitoring period per day per meter - not before and after every ST measurement in that day. So only fill out calibration info on one ST sheet unless using two different meters for ST's.*

LD CAL 200 ☐ SN-14280 ☒ SN-14279 1 kHz Tone Reference Level: ☒ 94 dB ☐ 114 dB

Calibration Offset Prior: -0.73 Offset After: 94dB

Caltone File Before: File #_____ Caltone File Before: File #_____

*Additional Notes:*

# Measurement Report

## Report Summary

| | | | |
|---|---|---|---|
| Meter's File Name | LxT_Data.062.s | Computer's File Name | LxT_0005424-20250319 155351-LxT_Data.062.ldbin |
| Meter | LxT1 0005424 | Firmware | 2.404 |
| User | AC | Location | ST-3 |
| Job Description | HBCS-7.0 | | |
| Note | | | |

| | | | | | |
|---|---|---|---|---|---|
| Start Time | 2025-03-19 16:53:51 | Duration | 0:15:00.0 | | |
| End Time | 2025-03-19 17:08:51 | Run Time | 0:15:00.0 | Pause Time | 0:00:00.0 |
| Pre-Calibration | 2025-03-19 16:46:22 | Post-Calibration | None | Calibration Deviation | --- |

## Results

### Overall Metrics

| | | | |
|---|---|---|---|
| $LA_{eq}$ | 56.8 dB | | |
| LAE | 86.3 dB | SEA | --- dB |
| EA | 47.9 µPa²h | | |
| EA8 | 1.5 mPa²h | | |
| EA40 | 7.7 mPa²h | | |
| $LAS_{peak}$ | 87.3 dB | 2025-03-19 16:54:49 | |
| $LAS_{max}$ | 68.0 dB | 2025-03-19 17:06:55 | |
| $LAS_{min}$ | 48.1 dB | 2025-03-19 16:56:29 | |
| $LA_{eq}$ | 56.8 dB | | |
| $LC_{eq}$ | 67.1 dB | $LC_{eq}$ - $LA_{eq}$ | 10.3 dB |
| $LAI_{eq}$ | 59.8 dB | $LAI_{eq}$ - $LA_{eq}$ | 3.0 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 |
| $L_{eq}$ | 56.8 dB | | --- dB | | --- dB | |
| $LS_{(max)}$ | 68.0 dB | 2025-03-19 17:06:55 | --- dB | None | --- dB | None |
| $LS_{(min)}$ | 48.1 dB | 2025-03-19 16:56:29 | --- dB | None | --- dB | None |
| $L_{Peak(max)}$ | 87.3 dB | 2025-03-19 16:54:49 | --- dB | None | --- dB | None |

### Overloads

| Count | Duration |
|---|---|
| 0 | 0:00:00.0 |

### Statistics

| | |
|---|---|
| LAS 2.0 | 64.4 dB |
| LAS 8.0 | 61.3 dB |
| LAS 25.0 | 57.2 dB |
| LAS 50.0 | 53.6 dB |
| LAS 90.0 | 50.3 dB |
| LAS 99.0 | 48.6 dB |

Project Name: _____ Date: 3/14/2025

Project Number: HBCS-7.0 Monitoring Personnel: AC

Monitoring Site #: ST #3 Time Start: 4:53 End: 5:04

Site Location/Address: At the corner of Reilly & Fownsworth corner of 8231 Reilly Drive

Primary Noise Source: Infrequent vehicle traffic into the campus parking lot for soccer practice, distant children noise, soccer practice, e-bikes

| Measurement Results | |
|---|---|
| Percentiles | dBA |
| Leq | 56.8 |
| Lmax | 68.0 |
| Lmin | 48.1 |
| L2 | 64.4 |
| L8 | 61.3 |
| L25 | 57.2 |
| L50 | 53.6 |
| Other | |
| SEL/CNEL | |

| Observed Noise Sources/Events | | |
|---|---|---|
| Time | Noise Source Event | dBA |
| 5:07 | Tow Truck drove by | 67.9 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Data File: 62 ☒ Photos: yes

Comments (sound walls, height, etc..) _____

| Max Wind Velocity (knots/hr) | Average Wind Velocity (knots/hr) | Temperature (F) | Relative Humidity (%) |
|---|---|---|---|
| | 9 mph | 70° | 33% |

Traffic counts in both directions:

| Roadway | # Lanes | Posted Speed | Autos | MD | HD |
|---|---|---|---|---|---|
| | | | | | |

## Calibration

*Note, for ST measurements, calibration is only necessary before and after each monitoring period per day per meter - not before and after every ST measurement in that day. So only fill out calibration info on one ST sheet unless using two different meters for ST's.*

LD CAL 200 ☐ SN-14280 ☒ SN-14279 1 kHz Tone Reference Level: ☒ 94 dB ☐ 114 dB

Calibration Offset Prior: -0.73 Offset After: 94.1B

Caltone File Before: File #_____ Caltone File Before: File #_____

*Additional Notes:*

## HBCS-07.0- 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* | *180* | *600* | *800* | *240* |
| Site Prep | 80 | 69 | 58 | 56 | 66 |
| *Distance in feet* | *50* | *30* | *425* | *740* | *95* |
| Light Pole Installation | 73 | 77 | 54 | 50 | 67 |
| Paving | 77 | 81 | 58 | 54 | 71 |
| *Distance in feet* | *50* | *30* | *420* | *740* | *95* |
| Utility Trenching | 77 | 81 | 59 | 54 | 71 |

*Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)*

## HBCS-07.0 - Vibration Annoyance Attenuation Calculations

**Levels in VdB**

| Equipment | Vibration @ 25 ft | Receptor to North | Receptor to East | Receptor to South | Receptor to West |
|---|---|---|---|---|---|
| *Distance in feet* | | *50* | *440* | *780* | *115* |
| Large Bulldozer | 87 | 78 | 50 | 42 | 67 |
| Caisson Drilling | 87 | 78 | 50 | 42 | 67 |
| Loaded Trucks | 86 | 77 | 49 | 41 | 66 |
| Jackhammer | 79 | 70 | 42 | 34 | 59 |
| Small Bulldozer | 58 | 49 | 21 | 13 | 38 |

## HBCS-07.0 - Vibration Damage Attenuation Calculations

**Levels, PPV (in/sec)**

| *Distance in feet* | **Vibration Reference Level at *25 feet*** | **Receptor to North** *50* | **Receptor to East** *440* | **Receptor to South** *780* | **Receptor to West** *115* |
|---|---|---|---|---|---|
| Large Bulldozer | 0.089 | 0.031 | 0.001 | 0.001 | 0.009 |
| Caisson Drilling | 0.089 | 0.031 | 0.001 | 0.001 | 0.009 |
| Loaded Trucks | 0.076 | 0.027 | 0.001 | 0.000 | 0.008 |
| Jackhammer | 0.035 | 0.012 | 0.000 | 0.000 | 0.004 |
| Small Bulldozer | 0.003 | 0.001 | 0.000 | 0.000 | 0.000 |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/21/2025
Case Description: HBCS-07.0 Site Preparation

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Receptor at 50 ft | Residential | 55.0 | 55.0 | 50.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Scraper | No | 40 | | 83.6 | 50.0 | 0.0 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) Day | | Evening | | Night | | Noise Limit Exceedance (dBA) Day | | Evening | | Night | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Equipment | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| Scraper | 83.6 | 79.6 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 83.6 | 79.6 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/21/2025
Case Description: HBCS-07.0 Utility Trenching

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Receptor at 50 ft | Residential | 70.0 | 65.0 | 60.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Drill Rig Truck | No | 20 | | 79.1 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drill Rig Truck | 79.1 | 72.2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 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 | 76.9 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/21/2025
Case Description: HBCS-07.0 Field Lighting

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Receptor at 50 ft | 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 |

Results

| | Calculated (dBA) | | Noise Limits (dBA) | | | | | | Noise Limit Exceedance (dBA) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | | Evening | | Night | | Day | | Evening | | Night | |
| Equipment | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | 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 |
| Total | 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 |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/21/2025
Case Description: HBCS-07.0 Paving

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Receptor at 50 ft | 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 |

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 |
| Total | 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 |

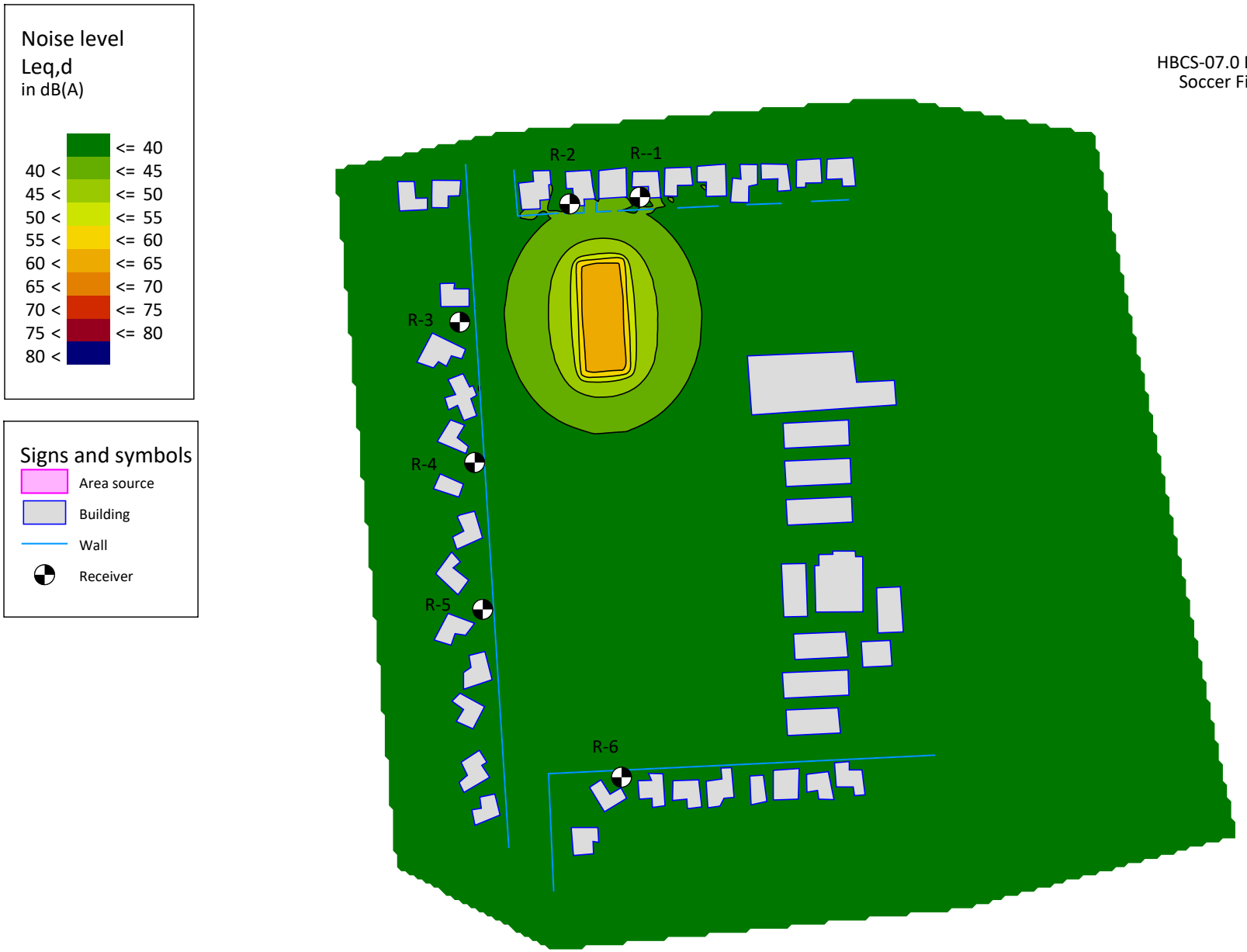
**Traffic Noise Calculator: FHWA 77-108** — **Peterson School Lighting (HBCS-07) Existing Traffic Noise Traffic Conditions**

| | Output | | | | | | Inputs | | | | | | | | | | | | | | | Auto Inputs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | dBA at 50 feet | | | Distance to CNEL Contour | | | Segment From - To | | | | | | | | | | | | | | | | |
| ID | $L_{eq\text{-}24hr}$ | $L_{dn}$ | CNEL | 70 dBA | 65 dBA | 60 dBA | Roadway | | | 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 | 60.9 | 63.7 | 64.4 | 21 | 45 | 98 | Indinanapolis Ave | Beach Blvd | Farnsworth Lane | 6,518 | 35 | 0.0% | 96.0% | 2.5% | 1.5% | 75.0% | 15.0% | 10.0% | 3 | Soft | 50 | 0.5 | 32 |
| 2 | 60.6 | 63.4 | 64.1 | 20 | 44 | 94 | Indinanapolis Ave | Kilkenny Lane | Newland Street | 6,163 | 35 | 0.0% | 96.0% | 2.5% | 1.5% | 75.0% | 15.0% | 10.0% | 3 | Soft | 50 | 0.5 | 32 |
| 3 | 52.0 | 54.8 | 55.5 | 5 | 12 | 25 | Farnsworth Lane | Indianapolis Ave | to the South | 1,685 | 25 | 0.0% | 96.0% | 2.5% | 1.5% | 75.0% | 15.0% | 10.0% | 2 | Soft | 50 | 0.5 | 20 |

**Traffic Noise Calculator: FHWA 77-108** — **Peterson School Lighting (HBCS-07) Existing Traffic Noise With Project Traffic Conditions**

| | Output | | | | | | Inputs | | | | | | | | | | | | | | Auto Inputs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | dBA at 50 feet | | | Distance to CNEL Contour | | | | Segment From - To | | | | | | | | | | | | | | |
| ID | $L_{eq\text{-}24hr}$ | $L_{dn}$ | CNEL | 70 dBA | 65 dBA | 60 dBA | Roadway | | | 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 | 61.0 | 63.7 | 64.4 | 21 | 46 | 99 | Indinanapolis Ave | Beach Blvd | Farnsworth Lane | 6,619 | 35 | 0.0% | 96.0% | 2.5% | 1.5% | 75.0% | 15.0% | 10.0% | 3 | Soft | 50 | 0.5 | 32 |
| 2 | 60.7 | 63.5 | 64.2 | 20 | 44 | 95 | Indinanapolis Ave | Kilkenny Lane | Newland Street | 6,261 | 35 | 0.0% | 96.0% | 2.5% | 1.5% | 75.0% | 15.0% | 10.0% | 3 | Soft | 50 | 0.5 | 32 |
| 3 | 52.3 | 55.0 | 55.7 | 6 | 12 | 26 | Farnsworth Lane | Indianapolis Ave | to the South | 1,774 | 25 | 0.0% | 96.0% | 2.5% | 1.5% | 75.0% | 15.0% | 10.0% | 2 | Soft | 50 | 0.5 | 20 |

HBCS-07.0 Proposed Project
Soccer Field Noise Contours



# Peterson Elementary Lighting Project
# Assessed receiver levels
# HBCS-07.0 Proposed Project

**2**

| Receiver | Usage | Fl | Leq,d<br>dB(A) | Leq,n<br>dB(A) | |
|---|---|---|---|---|---|
| R1 | SCR | G | 40.6 | 40.6 | |
| R2 | SCR | G | 39.5 | 39.5 | |
| R3 | SCR | G | 36.6 | 36.6 | |
| R4 | SCR | G | 34.1 | 34.1 | |
| R5 | SCR | G | 29.2 | 29.2 | |
| R6 | SCR | G | 25.2 | 25.2 | |

| Source | Source group | Source ty | Leq,d dB(A) | Leq,n dB(A) | |
|---|---|---|---|---|---|
| Receiver R1 Fl G dB(A) Lr,lim dB(A) Lr,lim dB(A) Ldn 47.0 dB(A) Leq,d 40.6 dB(A) Leq,n 40.6 dB(A) | | | | | |
| Soccer Field 1 | Default industrial noise | Area | 40.6 | 40.6 | |
| Receiver R2 Fl G dB(A) Lr,lim dB(A) Lr,lim dB(A) Ldn 45.9 dB(A) Leq,d 39.5 dB(A) Leq,n 39.5 dB(A) | | | | | |
| Soccer Field 1 | Default industrial noise | Area | 39.5 | 39.5 | |
| Receiver R3 Fl G dB(A) Lr,lim dB(A) Lr,lim dB(A) Ldn 43.0 dB(A) Leq,d 36.6 dB(A) Leq,n 36.6 dB(A) | | | | | |
| Soccer Field 1 | Default industrial noise | Area | 36.6 | 36.6 | |
| Receiver R4 Fl G dB(A) Lr,lim dB(A) Lr,lim dB(A) Ldn 40.5 dB(A) Leq,d 34.1 dB(A) Leq,n 34.1 dB(A) | | | | | |
| Soccer Field 1 | Default industrial noise | Area | 34.1 | 34.1 | |
| Receiver R5 Fl G dB(A) Lr,lim dB(A) Lr,lim dB(A) Ldn 35.6 dB(A) Leq,d 29.2 dB(A) Leq,n 29.2 dB(A) | | | | | |
| Soccer Field 1 | Default industrial noise | Area | 29.2 | 29.2 | |
| Receiver R6 Fl G dB(A) Lr,lim dB(A) Lr,lim dB(A) Ldn 31.6 dB(A) Leq,d 25.2 dB(A) Leq,n 25.2 dB(A) | | | | | |
| Soccer Field 1 | Default industrial noise | Area | 25.2 | 25.2 | |

# Peterson Elementary Lighting Project
# Octave spectra of the sources in dB(A) - HBCS-07.0 Proposed Project

| Name | Source type | l or A<br>m,m² | L'w<br>dB(A) | Lw<br>dB(A) | KI<br>dB | KT<br>dB | Day histogram | Emission spectrum | 500Hz<br>dB(A) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Soccer Field 1 | Area | 31413.90 | 56.0 | 101.0 | 0.0 | 0.0 | 100%/24h | Public soccer grounds | 101.0 | |

# Appendix D Peterson Elementary School Field Lighting Project Traffic Impact Study

# Appendix

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# PETERSON ELEMENTARY SCHOOL FIELD LIGHTING PROJECT

TRAFFIC IMPACT STUDY

**Prepared for:**
PlaceWorks

**Prepared by:**
DJ&A, P.C.

October 22, 2025

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Appendix A—Turning Movement & Roadway Segment Counts

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Appendix C—Synchro Reports [2026 No Project]

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Appendix E—Synchro Reports [2026 Project]

# 1. Project Description

Huntington Beach City School District is proposing improvements to Peterson Elementary School in Huntington Beach, California. The District is proposing field improvements at the school to allow for extracurricular sports activities to occur in the late afternoon and evening time periods. The proposed project would remove two existing unlit soccer fields and install one new lit soccer field with three field lighting poles with field lights. No off-site improvements would be proposed. No changes are proposed to the existing parking supply on the campus. The proposed project would not result in an increase in campus capacity or enrollment.

The proposed new lighted soccer field would continue to be utilized by Peterson ES students, the Peterson ES PTA, YMCA program, and AYSO players, coaches, and spectators. Installation of the field lighting poles would allow for evening uses for various after school events from the Peterson ES PTA, YMCA program, and AYSO. The Peterson ES PTA and YMCA program events would utilize the proposed field lighting. The Peterson ES PTA Fall Festival event would occur from 4:30 pm to 7:30 pm and the Spring Fling event would occur from 4:30pm to 7:30 pm. The YMCA program would utilize the field from the end of the school day to 6:00 pm on Mondays through Friday.

Specific to AYSO events, practices would extend into the evening during the winter months from approximately 4:00 pm to 7:00 pm on the weekdays. During evening use, the number of spectators would be minimal, and the proposed soccer field and field lights would be predominantly used by players and coaches, which would total approximately 60 attendees. Saturday use for AYSO would not utilize the proposed field lighting but would continue to utilize the proposed soccer field for games and practices with attendance being similar to the existing condition.

The school activities and ASYO activities noted above are existing activities that occur at the school. The proposed project would allow these activities to occur later in the evenings, especially during the fall and winter months. The proposed project would not result in any new activities occurring at the school.

Peterson Elementary is located adjacent to Farnsworth Lane to the east, with a water canal to the west. Residential housing surrounds the school to the north and to the south. The main entrance to the school is currently through the parking lot, with access off Farnsworth Lane. The access for the athletic fields is assumed to use the same entrance and exit locations with bidirectional turning movements permitted onto Farnsworth Lane outside of peak school time traffic.

# 2. Methodology

## 2.1 Intersection Analysis

The performance criteria used for evaluating traffic volumes and capacities within the study area are based on peak hour intersection volumes. Using peak hour intersection turning movement volumes and the intersection lane geometry, intersection capacity utilization (ICU) values are calculated for the PM peak hour. The ICU values represent volume to capacity (V/C) rations for the peak hour period. This provides a suitable measure of system performance. The traffic analysis examines the PM peak hour only since this is the time period where increased or new trips are anticipated to occur due to the proposed project. No changes to AM peak trip generation are anticipated.

To provide analysis of the unsignalized intersection of Farnsworth and Indianapolis, the 6th edition of the Highway Capacity Manual (HCM) was applied to all scenarios.

## 2.2 Determination of Significant Impacts

Traffic levels of service (LOS) 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 the intersection LOS calculations and the relationship between ICU and LOS, as defined by the 2017 General Plan Circulation Update from the City of Huntington Beach, CA (Stantec, 2017).

Table 1 describes traffic flow quality for different V/C ranges. The City of Huntington Beach has adopted a tiered LOS standard: LOS D is the performance standard for Principal intersections and LOS C is the performance standard for Secondary intersections. The two signalized intersections analyzed in this study are both designated as Secondary Intersections.

*Table 1 Level of Service Rating*

| Level of Service (LOS) | ICU |
|---|---|
| A | 0.00-0.60 |
| B | 0.61-0.70 |
| C | 0.71-0.80 |
| D | 0.81-0.90 |
| E | 0.91-1.00 |
| F | Above 1.00 |

Each intersection's LOS was determined by the calculated ICU. For any intersection that would have an ICU at or above 0.91, the LOS would not be acceptable. All project intersections with an ICU better than 0.91 have an acceptable LOS for that given scenario.

## 2.3 Average Daily Traffic Analysis

Average daily traffic (ADT) data was collected as a part of this study in three locations. Roadway segment volumes have been included for noise and air quality analysis purposes. Existing roadway segment volumes are summarized from 24-hour counts which can be found in Appendix A. The growth rate was assumed to be 1 percent per year, and project ADT volumes were calculated from the ITE Trip Gen. Manual for the land use of soccer fields.

# 3. Study Area Intersections and Roadway Segments

The three arterial roads adjacent to Peterson Elementary were selected for analysis. The following intersections and roadway segments were analyzed:

## 3.1 Study Intersections

1. Beach Blvd and Indianapolis Ave.
2. Farnsworth Lane and Indianapolis Ave.
3. Newland St. and Indianapolis Ave.

## 3.2 Roadway Segments

1. Indianapolis Ave. from Beach Blvd. to Farnsworth Lane
2. Indianapolis Ave. from Kilkenny Ln to Newland St.
3. Farnsworth Lane, South of Indianapolis Ave.

Traffic data for each study intersection was collected on Thursday, January 23rd, 2025, during the PM peak period (4:00 pm– 6:00pm). Average Daily Traffic (ADT) data for each study roadway segment was also collected on Thursday, January 23rd, 2025.

# 4. Traffic Study Periods and Scenarios

This study analyzes typical weekday daily and PM peak hour conditions. Daily traffic conditions were analyzed for a 24-hour period for each study area roadway segment. For intersections, the PM peak hour is defined as the highest one hour of traffic occurring during the PM peak period. Traffic operations for the study area intersections and roadway segment 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

For the purpose of this analysis, the project opening year for background traffic conditions is 2026. An ambient growth rate of 1% per year was used to forecast the future volumes. Based on the typical after school use of athletic fields from 4:00pm to 6:00 pm, analysis at the study area intersections focuses on the PM peak hour trips.

# 5. Existing Conditions

This section summarizes the analysis of Existing Conditions (2025) in the project study area. This scenario serves as the basis for which all subsequent scenarios are assessed. 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.

## 5.1 Existing Roadway Network

Selected roadways that are 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:

### *5.1.1 Beach Boulevard*

Beach Boulevard is a 6 lane, divided roadway that runs north and south to the west of the project site. The posted speed limit is 50 miles per hour. Sidewalks are located on the west side of Beach, south of Indianapolis Ave, and on both sides of Beach, north of Indianapolis Ave. There are signs stating 'Share the Road', but no separated bicycle facilities. The shoulder of the road serves as parallel parking. The adjacent businesses have parking on their lots. Behind the commercial zone directly adjacent to Beach, the surrounding land use is primarily residential.

### *5.1.2 Indianapolis Avenue*

Indianapolis Avenue is a 3 lane, undivided roadway that runs east and west to the north of the project site. The posted speed limit is 35 miles per hour. Sidewalks are located on the north and south sides of Indianapolis Ave. There are bike lanes on both sides of the road. The shoulder of the road serves as parallel parking, outside of the bike lane. The surrounding land use is primarily low density residential. There is a single commercial plot on the southwest corner of Indianapolis and Newland.

### *5.1.3 Newland Street*

Newland Street is a 5 lane, undivided roadway that runs north and south to the east of the project site. The posted speed limit is 45 miles per hour. Sidewalks are located on the east and west sides of Newland St. There are bike lanes on both sides of the road. The shoulder of the road serves as parallel parking for south bound traffic, outside of the bike lane for approx. 1000' north of Indianapolis. The south bound traffic lane condenses from 2 travel lanes to 1 to accommodate the parking lane. The surrounding land use is primarily low density residential. There is a single commercial plot on the southwest corner of Indianapolis and Newland.

### *5.1.4 Farnsworth Lane*

Farnsworth Lane is a 2-way, residential street that runs north and south directly adjacent to the east of the project site. As a residential street, there is no posted speed limit. Sidewalks are located on the east and west sides of Farnsworth Ln. There are no designated bike facilities. The shoulder of the road serves as both parallel parking and reserved for pickup and drop-off adjacent to the school. Peterson Elementary is on the west side of Farnsworth Ln. The land use is primarily low density residential.

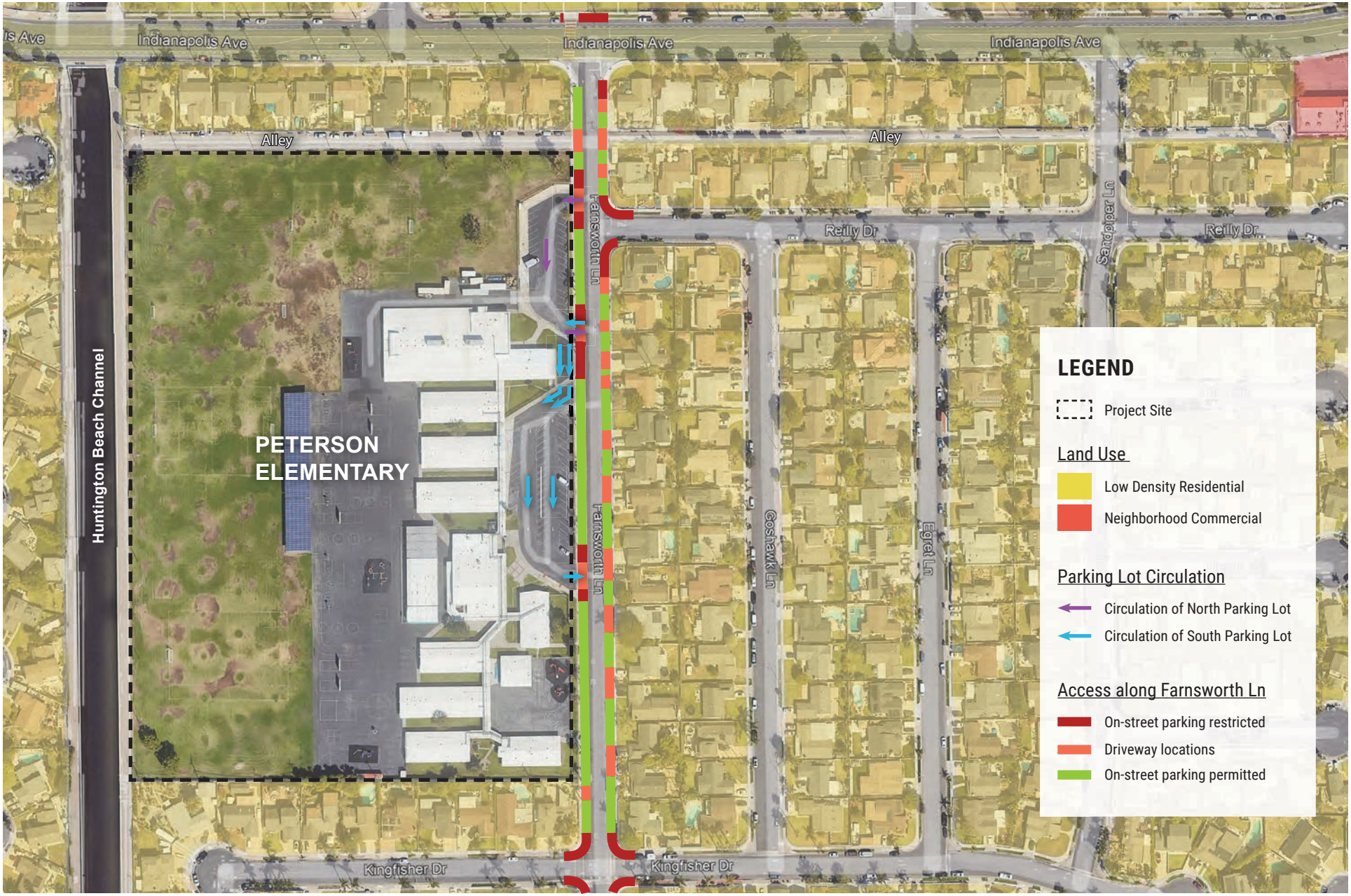
## 5.2 Existing Site Circulation and Queuing

Peterson Elementary School has parking and queuing facilities designed for the school day. There are two parking lots that are connected by a one-way access road. This provides parking spaces for the faculty and staff of the school and ensures smooth circulation during peak drop-off and pick-up times. The total parking availability for Peterson Elementary is summarized in Table 2.

*Table 2 Parking Availability*

| Parking Location | Parking Spaces | ADA Parking Spaces |
|---|---|---|
| School Campus Lot | 60 | 4 |
| Street Parking (West) | 16 | - |
| Street Parking (East) | 10 | - |
| **TOTAL** | **86** | **4** |

Figure 1 presents the existing site map, with access and circulation details.




## FIGURE 1: EXISTING ACCESS & CIRCULATION

## 5.3 Average Daily Traffic

The average daily traffic (ADT) volumes for the study area roadway segments under Existing Conditions are summarized in Table 3. Existing roadway segment volumes are summarized from 24-hour counts which can be found in Appendix A.

*Table 3 Roadway Average Daily Traffic (ADT)*

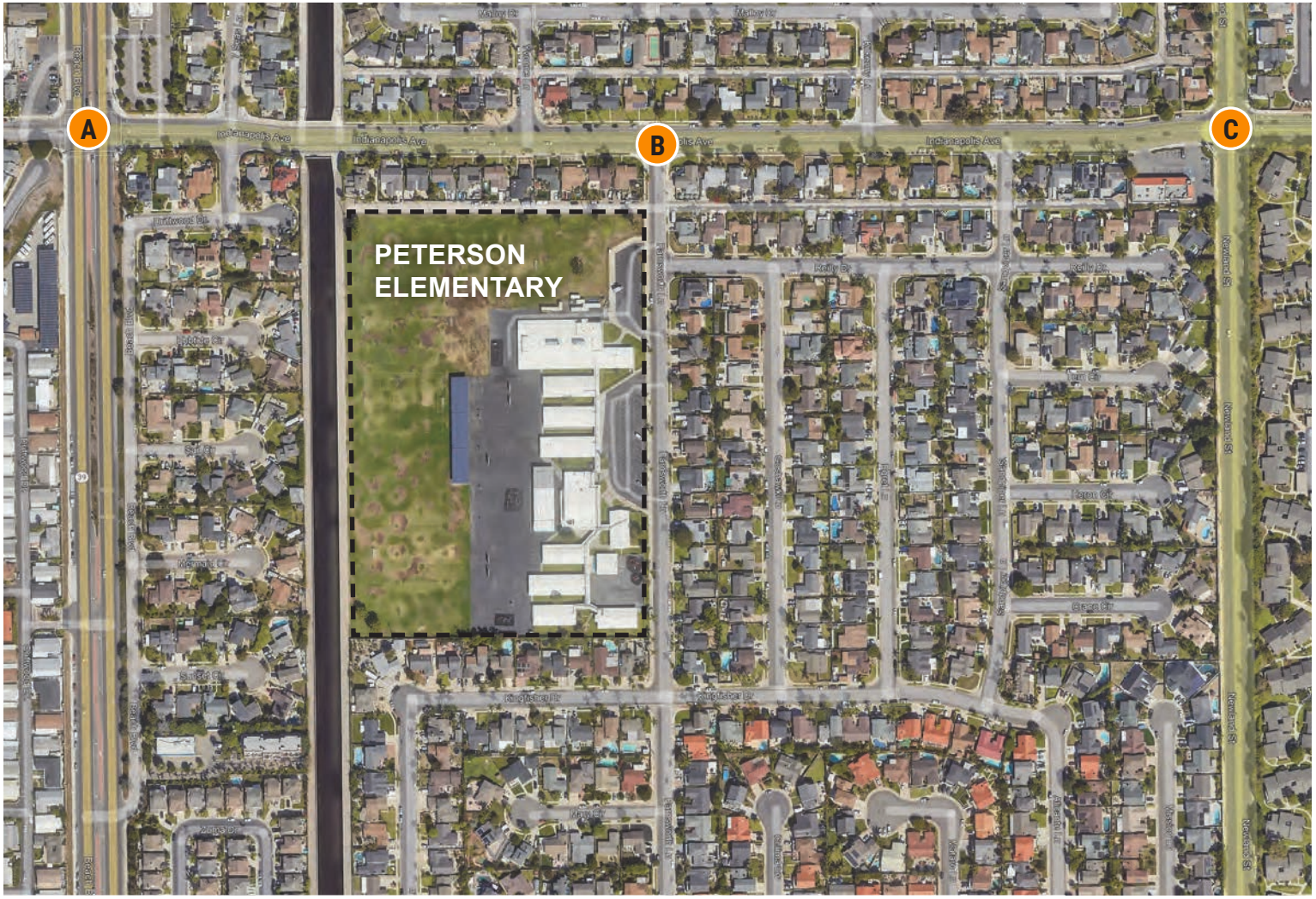
| Roadway | Source | Date | EXISTING ADT |
|---|---|---|---|
| Indianapolis Ave between Beach and Farnsworth | AimTD LLC | 1/23/2025 | 6,518 |
| Indianapolis Ave between Kilkenny and Newland | AimTD LLC | 1/23/2025 | 6,163 |
| Farnsworth south of Indianapolis Ave | AimTD LLC | 1/23/2025 | 1,685 |

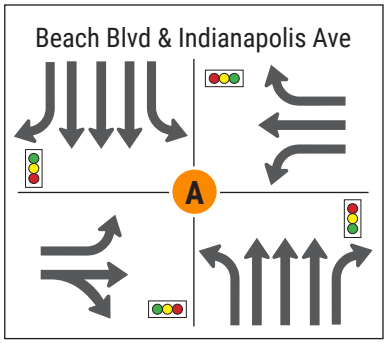
## 5.4 Intersection Levels of Service

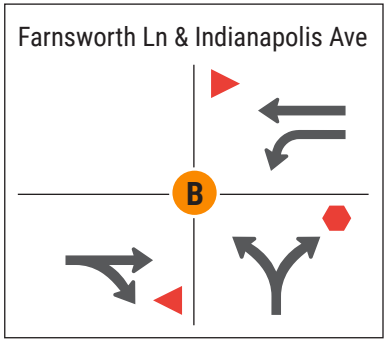
Intersection performance was determined using the methods outlined in Section 2. Table 4 summarizes the existing levels of service at the study intersections. Existing study intersection geometries are shown in Figure 2. Existing Year (2025) No Project PM peak hour turning movement volumes are shown in Figure 3. All three study intersections currently operate at an acceptable level of service during the PM peak hours.

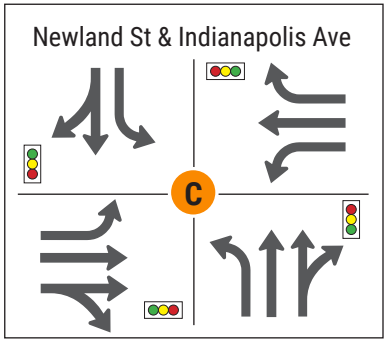
*Table 4 Existing Intersection Levels of Service*

| Intersection | Existing | | Existing | |
|---|---|---|---|---|
| | V/C | LOS | HCM Delay (seconds) | LOS |
| Beach Ave and Indianapolis Ave | 0.542 | A | | |
| Farnsworth Ln and Indianapolis Ave | 0.304 | A | 12.2 | B |
| Newland St and Indianapolis Ave | 0.599 | A | | |



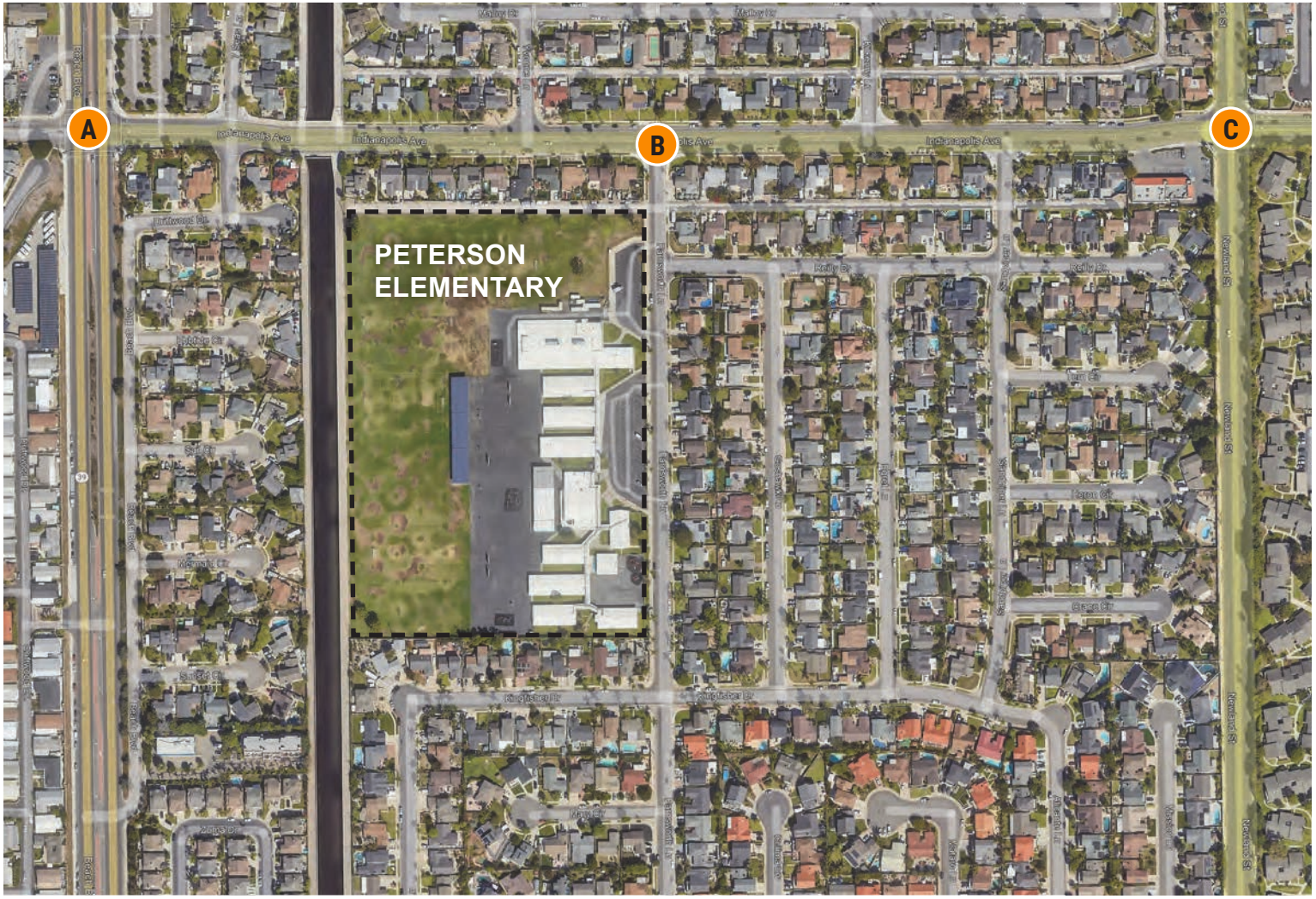



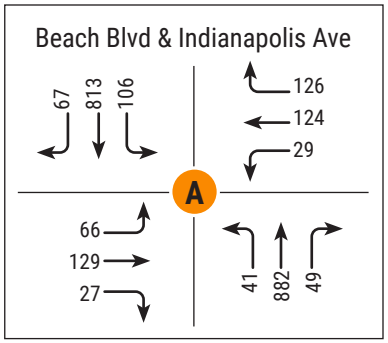

**LEGEND**

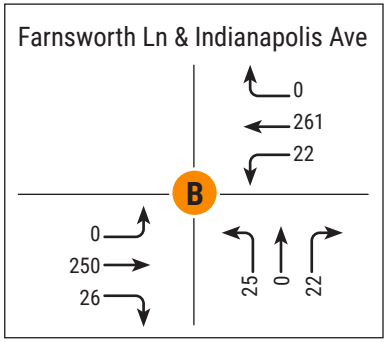
- X — Study Intersection
- Project Site
- Stop Sign
- Yield to Pedestrian Sign
- Traffic Light

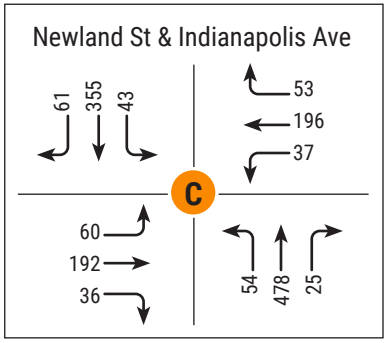
N

## FIGURE 2: EXISTING YEAR (2025) NO PROJECT | INTERSECTION GEOMETRY




**LEGEND**

- X Study Intersection
- PM Peak Hour Volume
- Project Site

N

## FIGURE 3: EXISTING YEAR (2025) NO PROJECT | VOLUMES - PM PEAK HOUR

# 6. 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 percent 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.

## 6.1 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 with No Project*

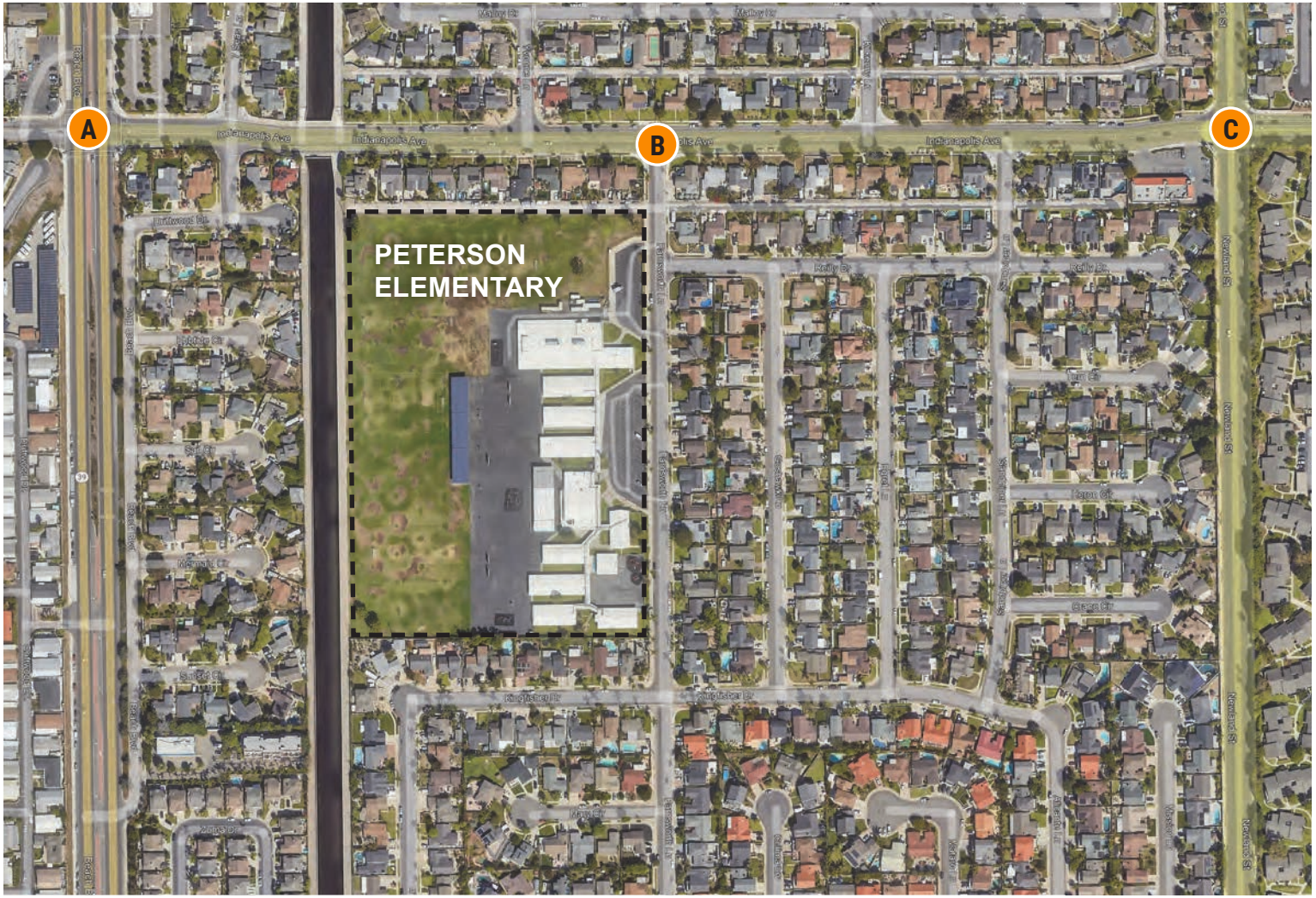
| Roadway | EXISTING ADT | 2026 No Project |
|---|---|---|
| Indianapolis Ave between Beach and Farnsworth | 6,518 | 6,619 |
| Indianapolis Ave between Kilkenny and Newland | 6,163 | 6,261 |
| Farnsworth south of Indianapolis Ave | 1,685 | 1,774 |

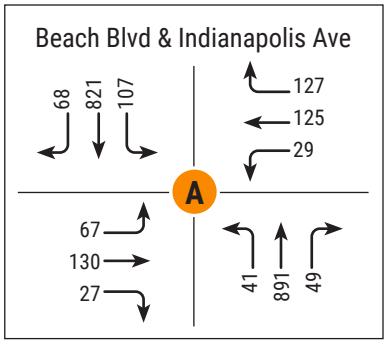
## 6.2 Intersection Levels of Service

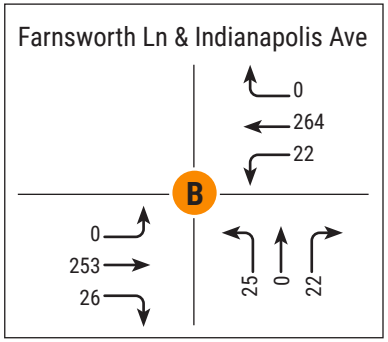
A summary of the PM peak hour intersection level of service analysis results for the Opening Year (2026) No Project scenario is presented in Table 6. Additionally, the HCM results for the intersection of Farnsworth and Indianapolis are included in Table 6. Opening Year (2026) No Project PM peak hour turning movement volumes are shown in Figure 4. All three intersections are forecasted to operate at acceptable levels of service during the Opening Year No Project conditions.

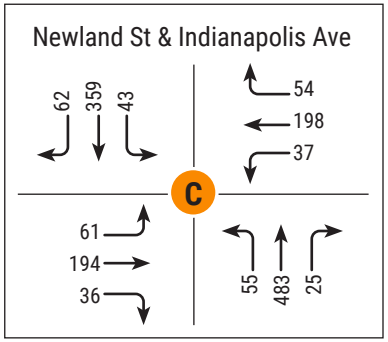
*Table 6 Opening Year (2026) No Project Intersection LOS*

| Intersection | Existing | | 2026 NP | | Existing | | 2026 NP | |
|---|---|---|---|---|---|---|---|---|
| | ICU | LOS | ICU | LOS | HCM Delay (s) | LOS | HCM Delay (s) | LOS |
| Beach Ave and Indianapolis Ave | 0.542 | A | 0.545 | A | | | | |
| Farnsworth Ln and Indianapolis Ave | 0.304 | A | 0.304 | A | 12.2 | B | 12.3 | B |
| Newland St and Indianapolis Ave | 0.599 | A | 0.603 | A | | | | |




**LEGEND**

- X Study Intersection
- PM Peak Hour Volume
- Project Site

N

## FIGURE 4: OPENING YEAR (2026) NO PROJECT | VOLUMES - PM PEAK HOUR

# 7. Project Conditions

## 7.1 Trip Generation and Distribution

The trip generation for the Peterson Elementary School field improvements project was estimated using rates published in the ITE Trip Generation Manual 12th Edition. The proposed project would create additional after-school opportunities for students with a lighted soccer field. These activities would take place outside of regular school hours and would shift existing trip generation to the PM peak hour.

Table 7 shows the trip generation forecasts.

*Table 7 Forecast Trip Generation*

| Land Use and Time Period | Trip Generation Rate | Distribution | | Trips | | Total |
|---|---|---|---|---|---|---|
| | | Inbound | Outbound | Inbound | Outbound | |
| Soccer Field - PM Peak Hour | 16.43 trips / field | 66% | 34% | 11 | 5 | 16 |
| Soccer Field - Weekday Daily | 71.33 trips / field | 50% | 50% | 36 | 35 | 71 |

The estimated trip distribution for project generated trips is shown on Figure 5.

## 7.2 Average Daily Traffic

The project is expected to generate 71 daily vehicle trips. Roadway segment volumes have been included for noise and air quality purposes. Existing roadway segment volumes are obtained from 24-hour counts presented in Appendix A.

Table 8 shows the ADT forecasts for the with project condition on each roadway segment.

*Table 8 Forecast ADT Volumes*

| Roadway | EXISTING ADT | 2025 With Project | 2026 No Project | 2026 With Project |
|---|---|---|---|---|
| Indianapolis Ave between Beach and Farnsworth | 6,518 | 6,554 | 6,619 | 6,619 |
| Indianapolis Ave between Kilkenny and Newland | 6,163 | 6,199 | 6,261 | 6,261 |
| Farnsworth south of Indianapolis Ave | 1,685 | 1,756 | 1,774 | 1,774 |




**LEGEND**

- X Study Intersection
- Project Site
- 5% Outbound Volumes
- 5% Inbound Volumes

## FIGURE 5: ESTIMATED TRIP DISTRIBUTION

## 7.3 VMT Screening

Per the Technical Advisory on Evaluating Transportation Impacts in CEQA, the screening threshold for small projects is described on page 12. It states: “projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact.” As this project is forecast to generate 71 daily trips, the project does not meet the VMT trip threshold under the CEQA Guidelines and the impact would be considered to be less than significant.

## 7.4 On-Site Circulation and Queuing

The current on-site circulation is designed to serve the typical school day pick up and drop off activity. This design maximizes on-site circulation and queuing capacity. The demand for on-site circulation and queuing regarding athletic field activities is anticipated to be negligible compared to the existing project site conditions during a typical school day. No impact is anticipated.

## 7.5 Parking Demand Analysis

The current parking availability for Peterson Elementary includes 56 stalls in the two parking lots, with more than 25 available street parking spaces. These parking spaces are currently designed and sized for the faculty and staff for the school, during school hours.

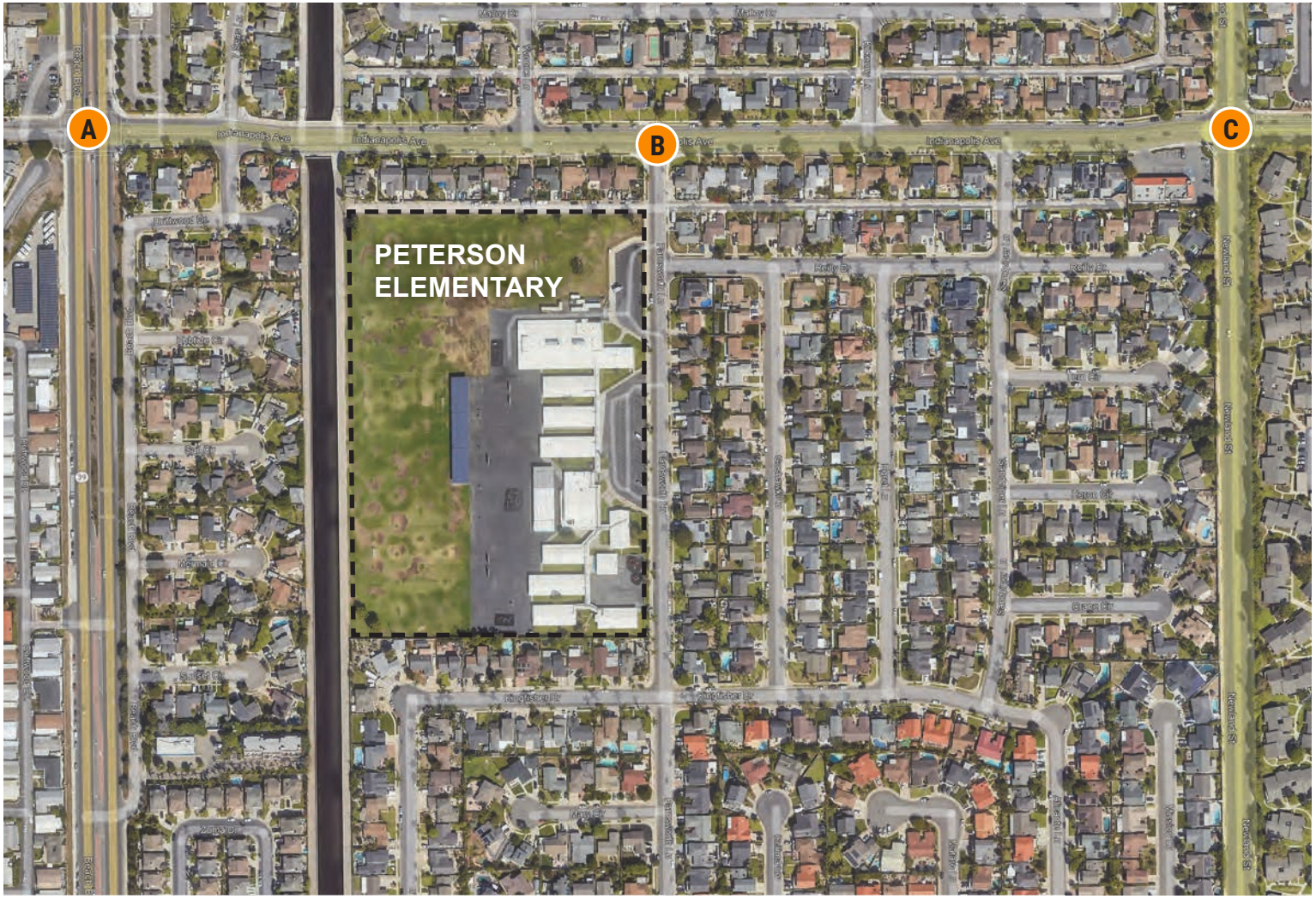
The additional parking demand for this project is negligible. As the anticipated trip generation is 16 trips, the amount of current parking lot and street parking spaces will suffice. No additional parking capacity is recommended for this project.

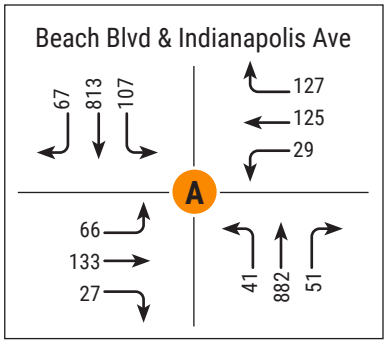
## 7.6 Intersection Analysis – 2025 With Project Conditions

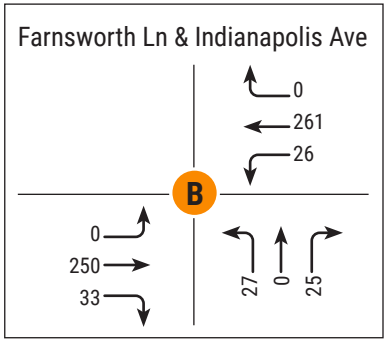
A summary of the PM peak hour intersection level of service analysis results for the Existing Year (2025) with Project scenario is presented in Table 9. Existing Year (2025) with Project PM peak hour turning movement volumes are shown in Figure 6. All three intersections are forecasted to operate at acceptable levels of service during the Opening Year No Project conditions.

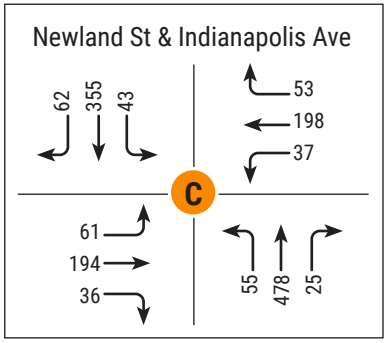
*Table 9 Existing Year (2025) With Project Intersection LOS*

| Intersection | Existing No Project | | Existing W/ Project | | Existing No Project | | Existing W/ Project | |
|---|---|---|---|---|---|---|---|---|
| | ICU | LOS | ICU | LOS | HCM Delay (s) | LOS | HCM Delay (s) | LOS |
| Beach Ave and Indianapolis Ave | 0.542 | A | 0.545 | A | | | | |
| Farnsworth Ln and Indianapolis Ave | | | | | 12.2 | B | 12.4 | B |
| Newland St and Indianapolis Ave | 0.599 | A | 0.601 | A | | | | |




**LEGEND**

- X Study Intersection
- PM Peak Hour Volume
- Project Site

N

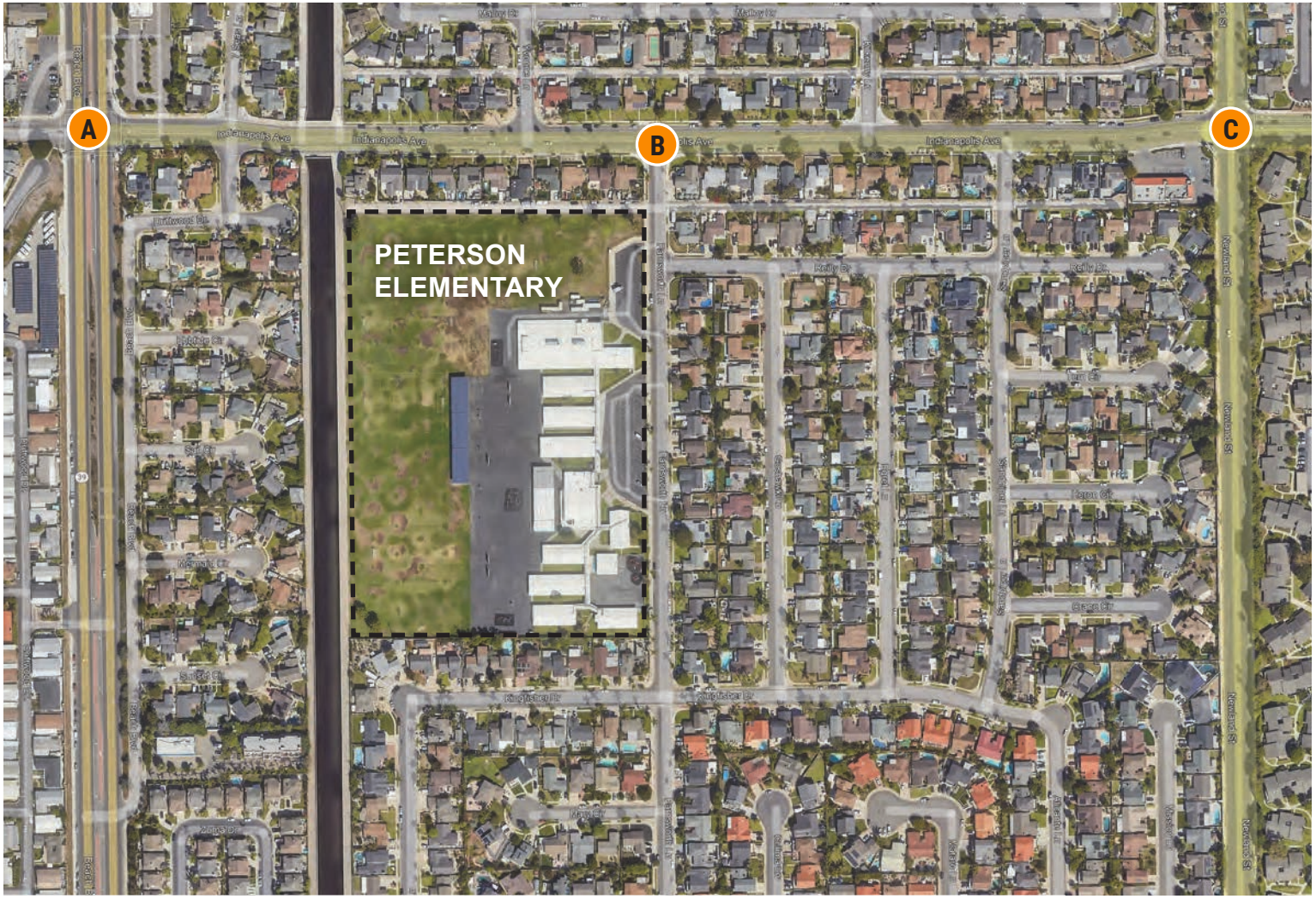
## FIGURE 6: EXISTING YEAR (2025) WITH PROJECT | VOLUMES - PM PEAK HOUR

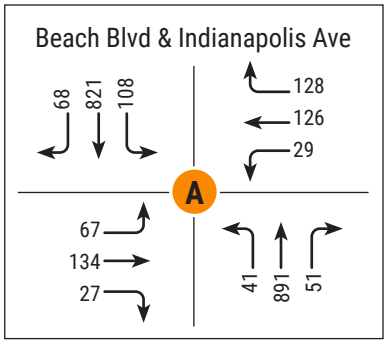
## 7.7 Intersection Analysis – Opening Year With Project

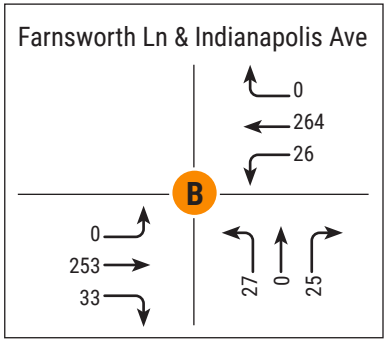
A summary of the PM peak hour intersection level of service analysis results for the Opening Year (2026) with Project scenario is presented in Table 10. Opening Year (2026) with Project PM peak hour turning movement volumes are shown in Figure 7. All three intersections are forecasted to operate at acceptable levels of service during the Opening Year with Project conditions.

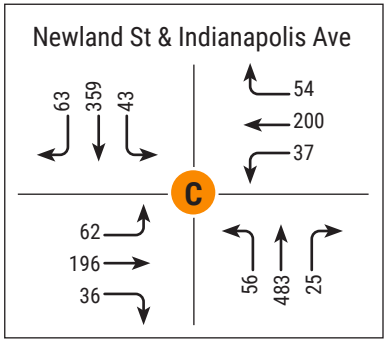
*Table 10 Opening Year (2026) With Project Intersection LOS*

| Intersection | 2026 No Project | | 2026 With Project | | 2026 No Project | | 2026 With Project | |
|---|---|---|---|---|---|---|---|---|
| | ICU | LOS | ICU | LOS | HCM Delay (s) | LOS | HCM Delay (s) | LOS |
| Beach Ave and Indianapolis Ave | 0.545 | A | 0.548 | A | | | | |
| Farnsworth Ln and Indianapolis Ave | 0.304 | A | 0.358 | A | 12.3 | B | 12.4 | B |
| Newland St and Indianapolis Ave | 0.603 | A | 0.605 | B | | | | |




**LEGEND**

- X Study Intersection
- PM Peak Hour Volume
- Project Site

## FIGURE 7: OPENING YEAR (2026) WITH PROJECT | VOLUMES - PM PEAK HOUR

# 8. Conclusion

Below are the summary tables for the intersection analysis, separated by intersection.

*Table 11 Farnsworth Ln and Indianapolis Ave Level of Service Summary*

| Farnsworth Ln and Indianapolis Ave | | | | |
|---|---|---|---|---|
| | 2025 No Project | 2025 With Project | 2026 No Project | 2026 With Project |
| HCM Control Delay (sec) | 12.2 | 12.4 | 12.3 | 12.4 |
| HCM 6th Ed. LOS | B | B | B | B |

*Table 12 Beach Ave and Indianapolis Ave Level of Service Summary*

| Beach Ave and Indianapolis Ave | | | | |
|---|---|---|---|---|
| | 2025 No Project | 2025 With Project | 2026 No Project | 2026 With Project |
| ICU V/C ratio | 0.542 | 0.545 | 0.545 | 0.548 |
| LOS | A | A | A | A |

*Table 13 Newland St and Indianapolis Ave Level of Service Summary*

| Newland St and Indianapolis Ave | | | | |
|---|---|---|---|---|
| | 2025 No Project | 2025 With Project | 2026 No Project | 2026 With Project |
| ICU V/C Ratio | 0.599 | 0.601 | 0.603 | 0.605 |
| LOS | A | A | A | B |

Based on the results of the level of service analysis, the proposed athletic field lighting project at Peterson Elementary School would not significantly impact any of the study intersections or roadway segments. All three study intersections operate at an acceptable level of service under both Existing Year (2025) and Opening Year (2026) with Project scenarios. Mitigation measures are not necessary based on the analysis.

There is sufficient on-site and street parking to accommodate the parking needs the athletic field will generate. The existing parking for staff and faculty during regular school hours has more capacity than the anticipated after-school hour needs of the athletic field. Additionally, there are no anticipated circulation impacts associated with the proposed project.

# References

Stantec. (2017, January 13). *General Plan Circulation Update, City of Huntington Beach, CA.* Retrieved July 2023, from https://www.huntingtonbeachca.gov/files/users/planning/Volume-III-Appendix-B-Circulation-Traffic-Study.pdf

State of California Governor's Office of Planning and Research. (2018, December). *Technical Advisory On Evaluating Transportation Impacts In CEQA.* Retrieved 2023, from opr.ca.gov: https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

Stantec. (2017, January 13). *General Plan Circulation Update, City of Huntington Beach, CA.* Retrieved July 2023, from https://www.huntingtonbeachca.gov/files/users/planning/Volume-III-Appendix-B-Circulation-Traffic-Study.pdf

State of California Governor's Office of Planning and Research. (2018, December). *Technical Advisory On Evaluating Transportation Impacts In CEQA.* Retrieved 2023, from opr.ca.gov: https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

# Appendix A—Turning Movement & Roadway Segment Counts

# INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Jan 23, 25

LOCATION: Huntington Beach
NORTH & SOUTH: Beach Blvd
EAST & WEST: Indianapolis Ave

PROJECT #: SC5146
LOCATION #: 1
CONTROL: SIGNAL

NOTES:

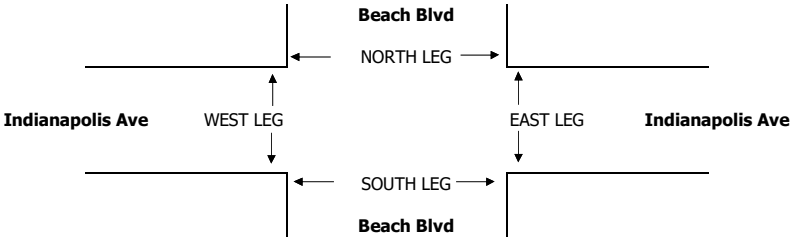
AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

| | | NORTHBOUND Beach Blvd | | | SOUTHBOUND Beach Blvd | | | EASTBOUND Indianapolis Ave | | | WESTBOUND Indianapolis Ave | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LANES: | NL 1 | NT 3 | NR 0 | SL 1 | ST 3 | SR 0 | EL 1 | ET 1 | ER 0 | WL 1 | WT 1 | WR 1 | TOTAL |
| PM | 4:00 PM | 7 | 186 | 7 | 22 | 178 | 20 | 19 | 21 | 9 | 13 | 39 | 26 | 547 |
| | 4:15 PM | 7 | 213 | 8 | 27 | 187 | 19 | 12 | 17 | 3 | 13 | 21 | 33 | 560 |
| | 4:30 PM | 10 | 170 | 15 | 22 | 212 | 15 | 15 | 37 | 6 | 8 | 31 | 30 | 571 |
| | 4:45 PM | 10 | 229 | 9 | 34 | 189 | 18 | 14 | 33 | 10 | 9 | 30 | 30 | 615 |
| | 5:00 PM | 16 | 264 | 18 | 25 | 213 | 19 | 16 | 24 | 7 | 5 | 27 | 29 | 663 |
| | 5:15 PM | 5 | 219 | 7 | 25 | 199 | 15 | 21 | 35 | 4 | 7 | 36 | 37 | 610 |
| | 5:30 PM | 5 | 215 | 7 | 23 | 185 | 18 | 9 | 22 | 9 | 7 | 30 | 26 | 556 |
| | 5:45 PM | 9 | 190 | 10 | 23 | 182 | 16 | 11 | 21 | 6 | 6 | 23 | 30 | 527 |
| | VOLUMES | 69 | 1,686 | 81 | 201 | 1,545 | 140 | 117 | 210 | 54 | 68 | 237 | 241 | 4,720 |
| | APPROACH % | 4% | 92% | 4% | 10% | 79% | 7% | 31% | 55% | 14% | 12% | 43% | 44% | |
| | APP/DEPART | 1,840 | / | 2,111 | 1,953 | / | 1,671 | 381 | / | 492 | 546 | / | 446 | 0 |
| | BEGIN PEAK HR | | 4:30 PM | | | | | | | | | | | |
| | VOLUMES | 41 | 882 | 49 | 106 | 813 | 67 | 66 | 129 | 27 | 29 | 124 | 126 | 2,499 |
| | APPROACH % | 4% | 91% | 5% | 10% | 79% | 7% | 30% | 58% | 12% | 10% | 44% | 45% | |
| | PEAK HR FACTOR | | 0.814 | | | 0.962 | | | 0.925 | | | 0.872 | | 0.928 |
| | APP/DEPART | 974 | / | 1,112 | 1,024 | / | 871 | 222 | / | 284 | 279 | / | 232 | 0 |

**U-TURNS**

| NB | SB | EB | WB | TTL |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | |
| 0 | 7 | 0 | 0 | 7 |
| 1 | 8 | 0 | 0 | 9 |
| 0 | 9 | 0 | 0 | 9 |
| 1 | 9 | 0 | 0 | 10 |
| 1 | 9 | 0 | 0 | 10 |
| 0 | 11 | 0 | 0 | 11 |
| 0 | 6 | 0 | 0 | 6 |
| 1 | 8 | 0 | 0 | 9 |
| 4 | 67 | 0 | 0 | 71 |

| | | | |
|---|---|---|---|
| 2 | 38 | 0 | 0 |



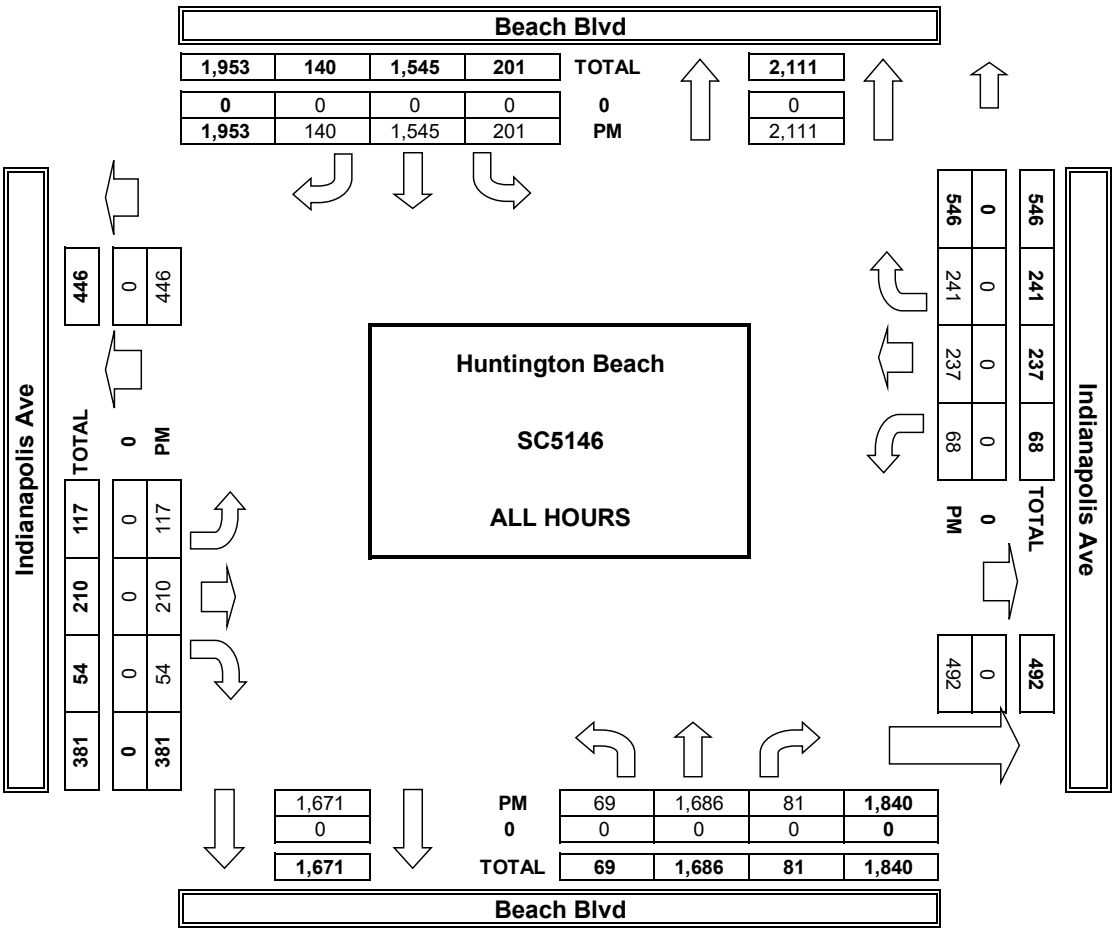

| | | ALL PED + BIKE & SCOOTER | | | | |
|---|---|---|---|---|---|---|
| | | N LEG | S LEG | E LEG | W LEG | TOTAL |
| PM | 4:00 PM | 5 | 0 | 0 | 0 | 5 |
| | 4:15 PM | 2 | 2 | 0 | 2 | 6 |
| | 4:30 PM | 0 | 2 | 2 | 2 | 6 |
| | 4:45 PM | 6 | 2 | 0 | 8 | 16 |
| | 5:00 PM | 1 | 1 | 0 | 0 | 2 |
| | 5:15 PM | 4 | 0 | 0 | 3 | 7 |
| | 5:30 PM | 2 | 2 | 1 | 3 | 8 |
| | 5:45 PM | 3 | 4 | 1 | 0 | 8 |
| | TOTAL | 23 | 13 | 4 | 18 | 58 |
| | BEGIN PEAK HR | 4:30 PM | | | | |

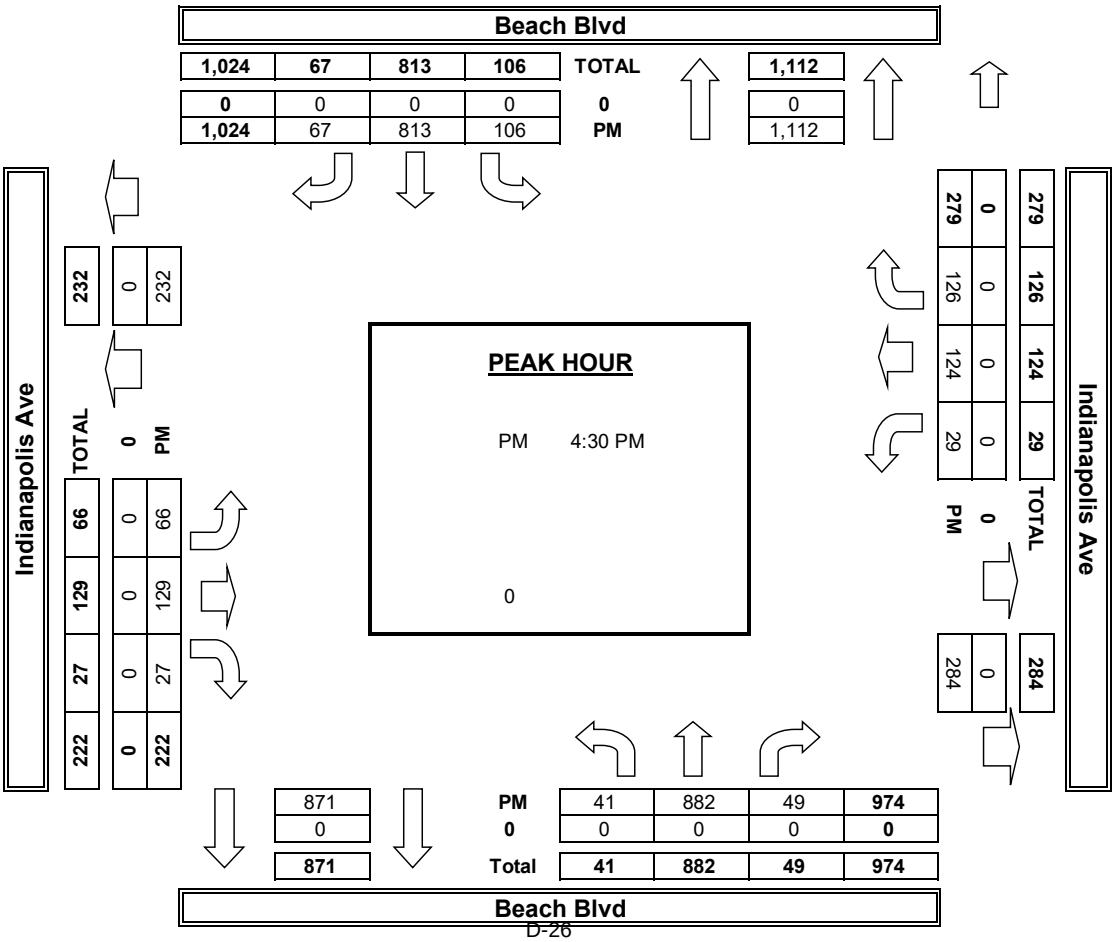
| PEDESTRIAN CROSSINGS | | | | |
|---|---|---|---|---|
| N LEG | S LEG | E LEG | W LEG | TOTAL |
| 2 | 0 | 0 | 0 | 2 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 2 | 3 |
| 1 | 0 | 0 | 4 | 5 |
| 0 | 1 | 0 | 0 | 1 |
| 1 | 0 | 0 | 3 | 4 |
| 1 | 1 | 0 | 2 | 4 |
| 2 | 0 | 0 | 0 | 2 |
| 7 | 2 | 1 | 12 | 22 |
| 2 | 1 | 1 | 9 | 13 |

| BICYCLE & SCOOTER CROSSINGS | | | | |
|---|---|---|---|---|
| NL | SL | EL | WL | TOTAL |
| 3 | 0 | 0 | 0 | 3 |
| 2 | 2 | 0 | 1 | 5 |
| 0 | 2 | 1 | 0 | 3 |
| 5 | 2 | 0 | 4 | 11 |
| 1 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 0 | 3 |
| 1 | 1 | 1 | 1 | 4 |
| 1 | 4 | 1 | 0 | 6 |
| 16 | 11 | 3 | 6 | 36 |
| | | | | |

**AimTD LLC**

TURNING MOVEMENT COUNTS



# INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

| DATE: | LOCATION: | Huntington Beach | PROJECT #: | SC5146 |
|---|---|---|---|---|
| Thu, Jan 23, 25 | NORTH & SOUTH: | Farnsworth Ln | LOCATION #: | 2 |
| | EAST & WEST: | Indianapolis Ave | CONTROL: | STOP N |

NOTES:

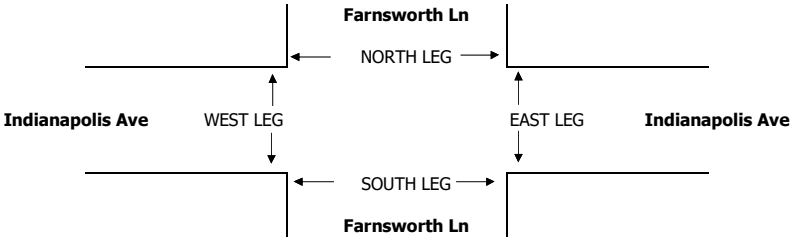
AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

| | NORTHBOUND Farnsworth Ln | | | SOUTHBOUND Farnsworth Ln | | | EASTBOUND Indianapolis Ave | | | WESTBOUND Indianapolis Ave | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LANES: | NL 0 | NT X | NR 0 | SL X | ST X | SR X | EL X | ET 1 | ER 0 | WL 1 | WT 1 | WR X | TOTAL |
| 4:00 PM | 9 | 0 | 10 | 0 | 0 | 0 | 0 | 47 | 6 | 7 | 57 | 0 | 136 |
| 4:15 PM | 6 | 0 | 5 | 0 | 0 | 0 | 0 | 44 | 9 | 9 | 66 | 0 | 139 |
| 4:30 PM | 9 | 0 | 4 | 0 | 0 | 0 | 0 | 60 | 6 | 4 | 58 | 0 | 141 |
| 4:45 PM | 5 | 0 | 4 | 0 | 0 | 0 | 0 | 63 | 7 | 5 | 63 | 0 | 147 |
| 5:00 PM | 3 | 0 | 6 | 0 | 0 | 0 | 0 | 63 | 9 | 6 | 64 | 0 | 151 |
| 5:15 PM | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 64 | 4 | 7 | 76 | 0 | 167 |
| 5:30 PM | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 41 | 8 | 7 | 63 | 0 | 126 |
| 5:45 PM | 7 | 0 | 6 | 0 | 0 | 0 | 0 | 48 | 6 | 4 | 58 | 0 | 129 |
| PM VOLUMES | 50 | 0 | 47 | 0 | 0 | 0 | 0 | 430 | 55 | 49 | 505 | 0 | 1,138 |
| APPROACH % | 52% | 0% | 48% | 0% | 0% | 0% | 0% | 89% | 11% | 9% | 91% | 0% | |
| APP/DEPART | 97 | / | 0 | 0 | / | 104 | 485 | / | 479 | 556 | / | 555 | 0 |
| BEGIN PEAK HR | | 4:30 PM | | | | | | | | | | | |
| VOLUMES | 25 | 0 | 22 | 0 | 0 | 0 | 0 | 250 | 26 | 22 | 261 | 0 | 607 |
| APPROACH % | 53% | 0% | 47% | 0% | 0% | 0% | 0% | 91% | 9% | 8% | 92% | 0% | |
| PEAK HR FACTOR | | 0.734 | | | 0.000 | | | 0.958 | | | 0.845 | | 0.903 |
| APP/DEPART | 47 | / | 0 | 0 | / | 48 | 276 | / | 273 | 284 | / | 286 | 0 |

**U-TURNS**

| NB | SB | EB | WB | TTL |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 2 | 2 |

| | | | | |
|---|---|---|---|---|
| 0 | 0 | 0 | 1 | |



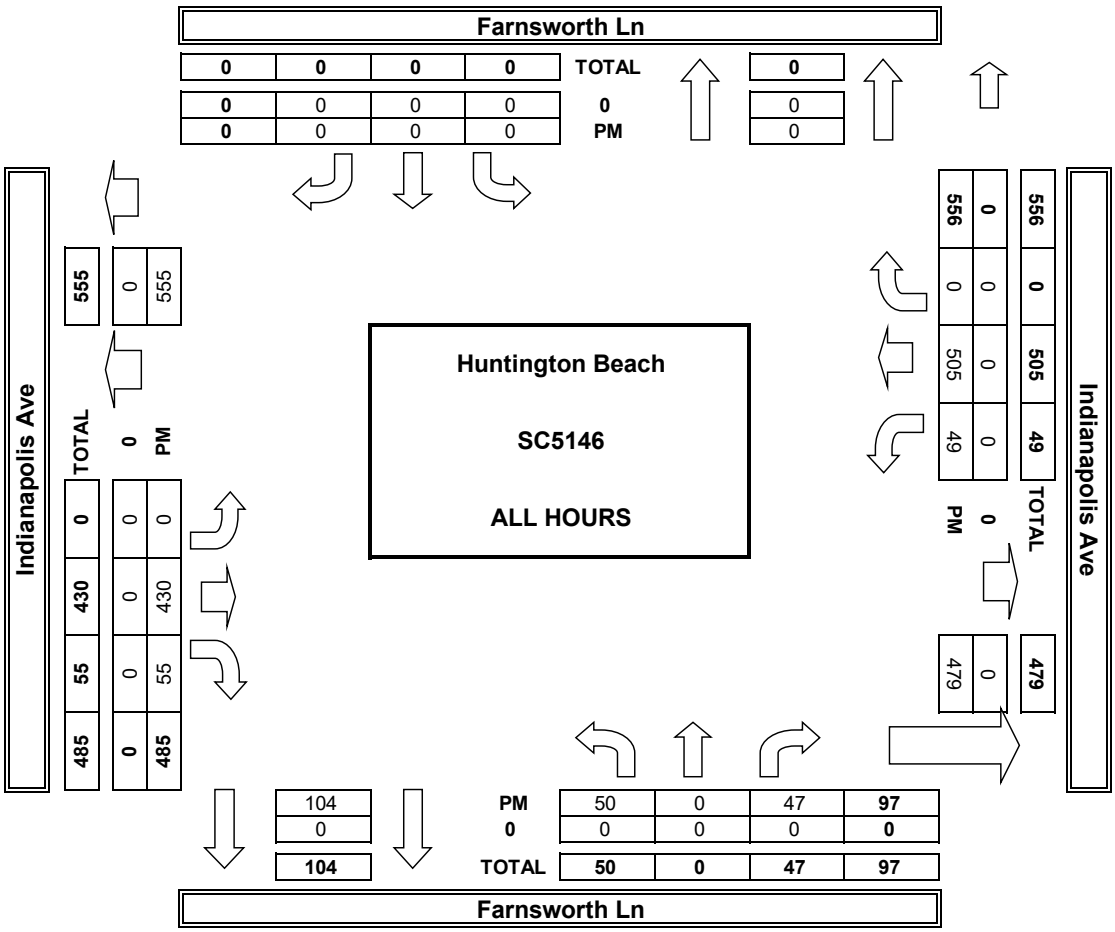

| | ALL PED + BIKE & SCOOTER | | | | |
|---|---|---|---|---|---|
| | N LEG | S LEG | E LEG | W LEG | TOTAL |
| 4:00 PM | 1 | 1 | 0 | 0 | 2 |
| 4:15 PM | 1 | 3 | 0 | 0 | 4 |
| 4:30 PM | 2 | 2 | 0 | 2 | 6 |
| 4:45 PM | 1 | 2 | 0 | 4 | 7 |
| 5:00 PM | 0 | 2 | 0 | 0 | 2 |
| 5:15 PM | 0 | 1 | 0 | 1 | 2 |
| 5:30 PM | 1 | 3 | 0 | 1 | 5 |
| 5:45 PM | 1 | 2 | 0 | 1 | 4 |
| TOTAL | 7 | 16 | 0 | 9 | 32 |
| BEGIN PEAK HR | 4:30 PM | | | | |

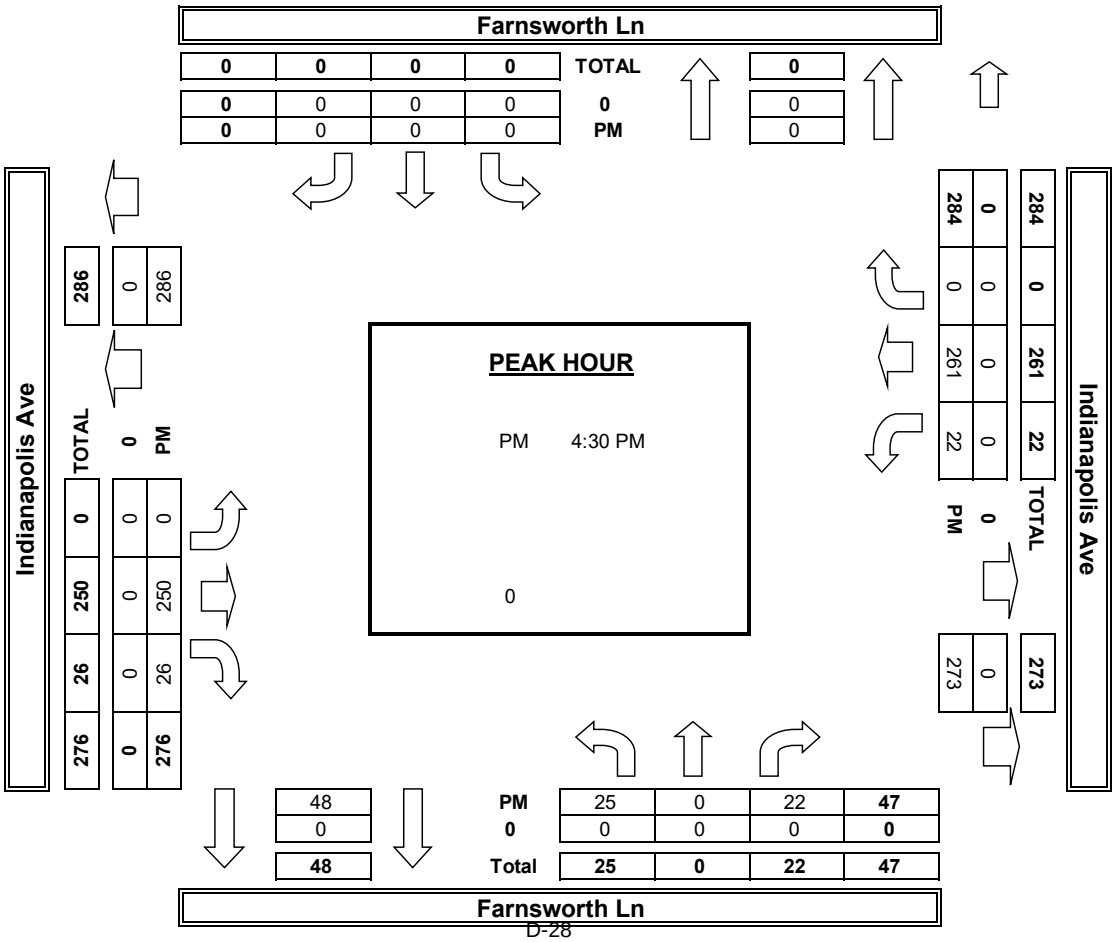
| | PEDESTRIAN CROSSINGS | | | | |
|---|---|---|---|---|---|
| | N LEG | S LEG | E LEG | W LEG | TOTAL |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 2 | 2 |
| 4:45 PM | 0 | 0 | 0 | 2 | 2 |
| 5:00 PM | 0 | 1 | 0 | 0 | 1 |
| 5:15 PM | 0 | 0 | 0 | 1 | 1 |
| 5:30 PM | 0 | 1 | 0 | 1 | 2 |
| 5:45 PM | 0 | 0 | 0 | 1 | 1 |
| TOTAL | 0 | 2 | 0 | 7 | 9 |
| BEGIN PEAK HR | 0 | 1 | 0 | 5 | 6 |

| | BICYCLE & SCOOTER CROSSINGS | | | | |
|---|---|---|---|---|---|
| | NL | SL | EL | WL | TOTAL |
| 4:00 PM | 1 | 1 | 0 | 0 | 2 |
| 4:15 PM | 1 | 3 | 0 | 0 | 4 |
| 4:30 PM | 2 | 2 | 0 | 0 | 4 |
| 4:45 PM | 1 | 2 | 0 | 2 | 5 |
| 5:00 PM | 0 | 1 | 0 | 0 | 1 |
| 5:15 PM | 0 | 1 | 0 | 0 | 1 |
| 5:30 PM | 1 | 2 | 0 | 0 | 3 |
| 5:45 PM | 1 | 2 | 0 | 0 | 3 |
| TOTAL | 7 | 14 | 0 | 2 | 23 |
| BEGIN PEAK HR | | | | | |

**AimTD LLC**

TURNING MOVEMENT COUNTS



# INTERSECTION TURNING MOVEMENT COUNTS

T112224

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

| DATE: | | | | |
|---|---|---|---|---|
| Thu, Jan 23, 25 | LOCATION: | Huntington Beach | PROJECT #: | SC5146 |
| | NORTH & SOUTH: | Newland St | LOCATION #: | 3 |
| | EAST & WEST: | Indianapolis Ave | CONTROL: | SIGNAL |

NOTES:

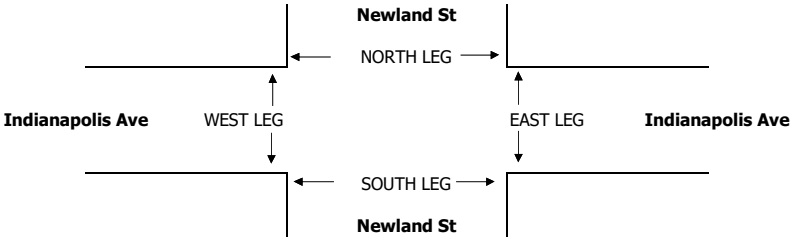
AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

| | NORTHBOUND Newland St | | | SOUTHBOUND Newland St | | | EASTBOUND Indianapolis Ave | | | WESTBOUND Indianapolis Ave | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LANES: | NL 1 | NT 2 | NR 0 | SL 1 | ST 1 | SR 0 | EL 1 | ET 2 | ER 0 | WL 1 | WT 1 | WR 1 | TOTAL |
| 4:00 PM | 9 | 128 | 7 | 9 | 73 | 12 | 20 | 44 | 8 | 6 | 51 | 25 | 392 |
| 4:15 PM | 13 | 126 | 8 | 12 | 92 | 17 | 12 | 37 | 7 | 8 | 48 | 16 | 396 |
| 4:30 PM | 15 | 136 | 4 | 14 | 84 | 19 | 14 | 45 | 7 | 8 | 38 | 15 | 399 |
| 4:45 PM | 13 | 104 | 4 | 9 | 79 | 15 | 16 | 43 | 14 | 10 | 51 | 13 | 371 |
| 5:00 PM | 5 | 106 | 9 | 7 | 94 | 12 | 12 | 58 | 6 | 7 | 56 | 10 | 382 |
| 5:15 PM | 21 | 132 | 8 | 13 | 98 | 15 | 18 | 46 | 9 | 12 | 51 | 15 | 438 |
| 5:30 PM | 6 | 127 | 4 | 13 | 77 | 15 | 12 | 36 | 5 | 9 | 57 | 10 | 371 |
| 5:45 PM | 17 | 116 | 4 | 7 | 75 | 10 | 8 | 36 | 5 | 11 | 40 | 10 | 339 |
| PM VOLUMES | 99 | 975 | 48 | 84 | 672 | 115 | 112 | 345 | 61 | 71 | 392 | 114 | 3,088 |
| APPROACH % | 9% | 87% | 4% | 10% | 77% | 13% | 22% | 67% | 12% | 12% | 68% | 20% | |
| APP/DEPART | 1,122 | / | 1,201 | 871 | / | 804 | 518 | / | 477 | 577 | / | 606 | 0 |
| BEGIN PEAK HR | | 4:30 PM | | | | | | | | | | | |
| VOLUMES | 54 | 478 | 25 | 43 | 355 | 61 | 60 | 192 | 36 | 37 | 196 | 53 | 1,590 |
| APPROACH % | 10% | 86% | 4% | 9% | 77% | 13% | 21% | 67% | 13% | 13% | 69% | 19% | |
| PEAK HR FACTOR | | 0.865 | | | 0.911 | | | 0.947 | | | 0.917 | | 0.908 |
| APP/DEPART | 557 | / | 591 | 459 | / | 428 | 288 | / | 260 | 286 | / | 311 | 0 |

**U-TURNS**

| NB | SB | EB | WB | TTL |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |

| | | | |
|---|---|---|---|
| 0 | 0 | 0 | 0 |



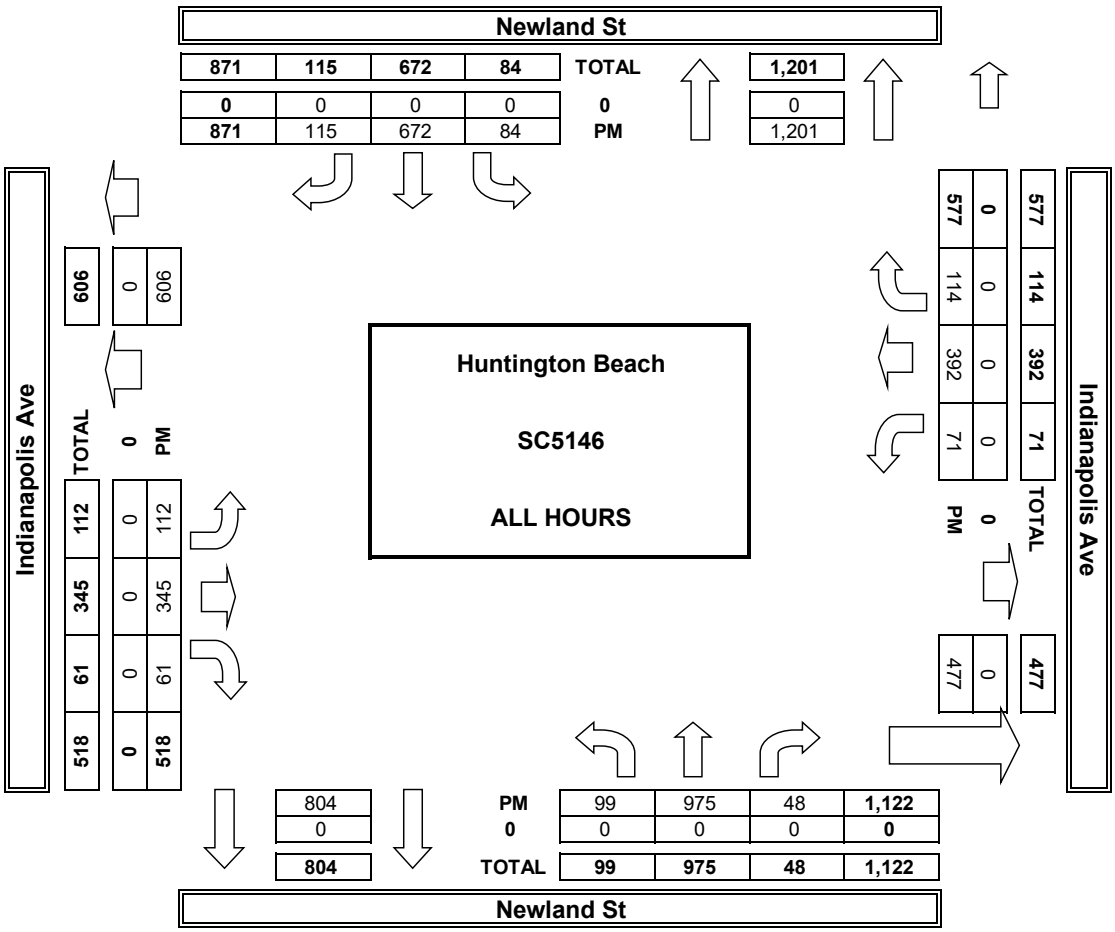

| | ALL PED + BIKE & SCOOTER | | | | |
|---|---|---|---|---|---|
| | N LEG | S LEG | E LEG | W LEG | TOTAL |
| 4:00 PM | 1 | 2 | 2 | 2 | 7 |
| 4:15 PM | 0 | 3 | 2 | 2 | 7 |
| 4:30 PM | 2 | 1 | 2 | 3 | 8 |
| 4:45 PM | 2 | 2 | 1 | 5 | 10 |
| 5:00 PM | 2 | 1 | 2 | 3 | 8 |
| 5:15 PM | 3 | 1 | 0 | 2 | 6 |
| 5:30 PM | 1 | 0 | 0 | 1 | 2 |
| 5:45 PM | 0 | 2 | 3 | 0 | 5 |
| TOTAL | 11 | 12 | 12 | 18 | 53 |
| BEGIN PEAK HR | 4:30 PM | | | | |

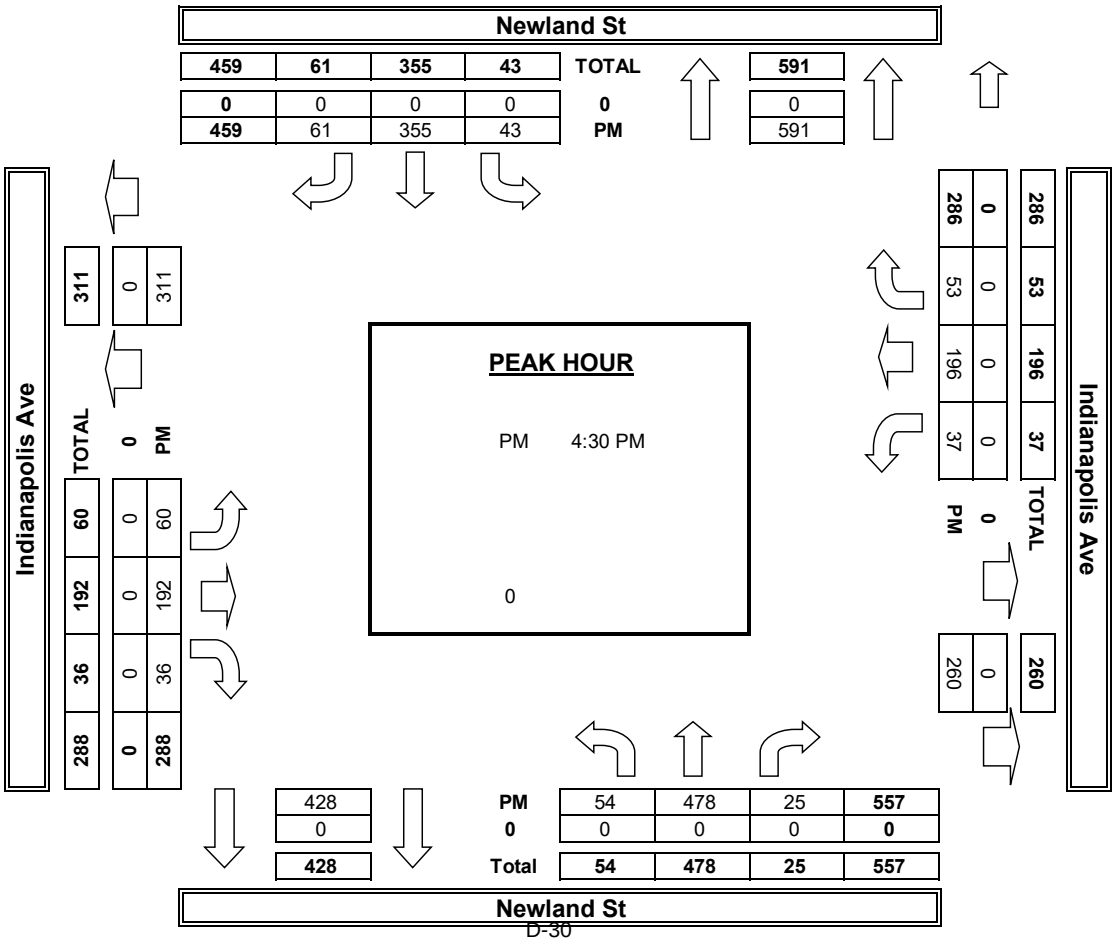
| | PEDESTRIAN CROSSINGS | | | | |
|---|---|---|---|---|---|
| | N LEG | S LEG | E LEG | W LEG | TOTAL |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 1 | 1 |
| 5:00 PM | 1 | 1 | 1 | 1 | 4 |
| 5:15 PM | 1 | 0 | 0 | 1 | 2 |
| 5:30 PM | 1 | 0 | 0 | 1 | 2 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 3 | 1 | 1 | 4 | 9 |
| BEGIN PEAK HR | 2 | 1 | 1 | 3 | 7 |

| | BICYCLE & SCOOTER CROSSINGS | | | | |
|---|---|---|---|---|---|
| | NL | SL | EL | WL | TOTAL |
| 4:00 PM | 1 | 2 | 2 | 2 | 7 |
| 4:15 PM | 0 | 3 | 2 | 2 | 7 |
| 4:30 PM | 2 | 1 | 2 | 3 | 8 |
| 4:45 PM | 2 | 2 | 1 | 4 | 9 |
| 5:00 PM | 1 | 0 | 1 | 2 | 4 |
| 5:15 PM | 2 | 1 | 0 | 1 | 4 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 2 | 3 | 0 | 5 |
| TOTAL | 8 | 11 | 11 | 14 | 44 |
| BEGIN PEAK HR | | | | | |

**AimTD LLC**

TURNING MOVEMENT COUNTS



Thursday, January 23, 2025 CITY: Huntington Beach PROJECT: SC5146

**ADT1 Indianapolis Ave between Beach Blvd and Farnsworth Ln.** **Prepared by AimTD LLC tel. 714 253 7888**

| AM Period | EB | | WB | | | PM Period | EB | | WB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0:00 | 2 | | 2 | | | 12:00 | 53 | | 29 | | |
| 0:15 | 3 | | 0 | | | 12:15 | 85 | | 51 | | |
| 0:30 | 2 | | 3 | | | 12:30 | 65 | | 62 | | |
| 0:45 | 2 | 9 | 2 | 7 | 16 | 12:45 | 59 | 262 | 43 | 185 | 447 |
| 1:00 | 2 | | 3 | | | 13:00 | 56 | | 58 | | |
| 1:15 | 2 | | 3 | | | 13:15 | 78 | | 53 | | |
| 1:30 | 2 | | 1 | | | 13:30 | 92 | | 59 | | |
| 1:45 | 2 | 8 | 1 | 8 | 16 | 13:45 | 71 | 297 | 77 | 247 | 544 |
| 2:00 | 2 | | 1 | | | 14:00 | 64 | | 84 | | |
| 2:15 | 1 | | 1 | | | 14:15 | 66 | | 50 | | |
| 2:30 | 2 | | 0 | | | 14:30 | 65 | | 63 | | |
| 2:45 | 0 | 5 | 1 | 3 | 8 | 14:45 | 68 | 263 | 72 | 269 | 532 |
| 3:00 | 0 | | 0 | | | 15:00 | 51 | | 78 | | |
| 3:15 | 1 | | 2 | | | 15:15 | 55 | | 76 | | |
| 3:30 | 0 | | 1 | | | 15:30 | 67 | | 72 | | |
| 3:45 | 1 | 2 | 1 | 4 | 6 | 15:45 | 49 | 222 | 59 | 285 | 507 |
| 4:00 | 3 | | 2 | | | 16:00 | 53 | | 66 | | |
| 4:15 | 2 | | 3 | | | 16:15 | 53 | | 72 | | |
| 4:30 | 1 | | 3 | | | 16:30 | 66 | | 67 | | |
| 4:45 | 4 | 10 | 3 | 11 | 21 | 16:45 | 70 | 242 | 68 | 273 | 515 |
| 5:00 | 4 | | 3 | | | 17:00 | 72 | | 67 | | |
| 5:15 | 11 | | 6 | | | 17:15 | 68 | | 84 | | |
| 5:30 | 13 | | 8 | | | 17:30 | 49 | | 66 | | |
| 5:45 | 10 | 38 | 12 | 29 | 67 | 17:45 | 54 | 243 | 65 | 282 | 525 |
| 6:00 | 7 | | 9 | | | 18:00 | 48 | | 62 | | |
| 6:15 | 14 | | 17 | | | 18:15 | 37 | | 45 | | |
| 6:30 | 15 | | 20 | | | 18:30 | 37 | | 40 | | |
| 6:45 | 29 | 65 | 21 | 67 | 132 | 18:45 | 34 | 156 | 35 | 182 | 338 |
| 7:00 | 37 | | 19 | | | 19:00 | 39 | | 34 | | |
| 7:15 | 50 | | 27 | | | 19:15 | 21 | | 45 | | |
| 7:30 | 63 | | 46 | | | 19:30 | 36 | | 31 | | |
| 7:45 | 82 | 232 | 51 | 143 | 375 | 19:45 | 20 | 116 | 17 | 127 | 243 |
| 8:00 | 68 | | 68 | | | 20:00 | 22 | | 29 | | |
| 8:15 | 132 | | 55 | | | 20:15 | 21 | | 25 | | |
| 8:30 | 141 | | 113 | | | 20:30 | 22 | | 31 | | |
| 8:45 | 55 | 396 | 97 | 333 | 729 | 20:45 | 18 | 83 | 16 | 101 | 184 |
| 9:00 | 52 | | 46 | | | 21:00 | 14 | | 18 | | |
| 9:15 | 39 | | 39 | | | 21:15 | 14 | | 15 | | |
| 9:30 | 52 | | 33 | | | 21:30 | 15 | | 18 | | |
| 9:45 | 35 | 178 | 40 | 158 | 336 | 21:45 | 13 | 56 | 18 | 69 | 125 |
| 10:00 | 42 | | 42 | | | 22:00 | 13 | | 11 | | |
| 10:15 | 36 | | 57 | | | 22:15 | 8 | | 12 | | |
| 10:30 | 41 | | 42 | | | 22:30 | 10 | | 13 | | |
| 10:45 | 38 | 157 | 50 | 191 | 348 | 22:45 | 4 | 35 | 3 | 39 | 74 |
| 11:00 | 49 | | 43 | | | 23:00 | 7 | | 4 | | |
| 11:15 | 50 | | 43 | | | 23:15 | 4 | | 3 | | |
| 11:30 | 53 | | 54 | | | 23:30 | 3 | | 0 | | |
| 11:45 | 58 | 210 | 51 | 191 | 401 | 23:45 | 4 | 18 | 4 | 11 | 29 |
| **Total Vol.** | | 1310 | | 1145 | **2455** | | | 1993 | | 2070 | **4063** |

| **Daily Totals** | EB | WB | **Combined** |
|---|---|---|---|
| | 3303 | 3215 | **6518** |

| | **AM** | | | **PM** | | |
|---|---|---|---|---|---|---|
| **Split %** | 53.4% | 46.6% | **37.7%** | 49.1% | 50.9% | **62.3%** |
| **Peak Hour** | 7:45 | 8:00 | **8:00** | 13:15 | 14:45 | **13:15** |
| **Volume** | 423 | 333 | **729** | 305 | 298 | **578** |
| **P.H.F.** | 0.75 | 0.74 | **0.72** | 0.83 | 0.96 | **0.96** |

cs@aimtd.com Tell. 714 253 7888

Thursday, January 23, 2025 CITY: Huntington Beach PROJECT: SC5146

**ADT2 Indianapolis Ave between Kilkenny Ln and Newland St.** **Prepared by AimTD LLC tel. 714 253 7888**

| AM Period | EB | | WB | | | PM Period | EB | | WB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0:00 | 2 | | 3 | | | 12:00 | 47 | | 31 | | |
| 0:15 | 3 | | 0 | | | 12:15 | 68 | | 40 | | |
| 0:30 | 2 | | 3 | | | 12:30 | 57 | | 52 | | |
| 0:45 | 2 | 9 | 2 | 8 | 17 | 12:45 | 55 | 227 | 44 | 167 | 394 |
| 1:00 | 2 | | 3 | | | 13:00 | 51 | | 55 | | |
| 1:15 | 2 | | 2 | | | 13:15 | 61 | | 64 | | |
| 1:30 | 1 | | 1 | | | 13:30 | 51 | | 68 | | |
| 1:45 | 2 | 7 | 1 | 7 | 14 | 13:45 | 55 | 218 | 60 | 247 | 465 |
| 2:00 | 2 | | 1 | | | 14:00 | 72 | | 63 | | |
| 2:15 | 2 | | 1 | | | 14:15 | 68 | | 44 | | |
| 2:30 | 2 | | 1 | | | 14:30 | 59 | | 59 | | |
| 2:45 | 1 | 7 | 1 | 4 | 11 | 14:45 | 71 | 270 | 68 | 234 | 504 |
| 3:00 | 1 | | 0 | | | 15:00 | 47 | | 69 | | |
| 3:15 | 1 | | 2 | | | 15:15 | 62 | | 71 | | |
| 3:30 | 0 | | 2 | | | 15:30 | 59 | | 67 | | |
| 3:45 | 1 | 3 | 1 | 5 | 8 | 15:45 | 48 | 216 | 59 | 266 | 482 |
| 4:00 | 5 | | 2 | | | 16:00 | 57 | | 64 | | |
| 4:15 | 2 | | 3 | | | 16:15 | 50 | | 76 | | |
| 4:30 | 2 | | 3 | | | 16:30 | 64 | | 62 | | |
| 4:45 | 4 | 13 | 3 | 11 | 24 | 16:45 | 67 | 238 | 68 | 270 | 508 |
| 5:00 | 6 | | 3 | | | 17:00 | 69 | | 70 | | |
| 5:15 | 12 | | 6 | | | 17:15 | 73 | | 84 | | |
| 5:30 | 13 | | 7 | | | 17:30 | 45 | | 70 | | |
| 5:45 | 13 | 44 | 12 | 28 | 72 | 17:45 | 54 | 241 | 62 | 286 | 527 |
| 6:00 | 11 | | 11 | | | 18:00 | 48 | | 60 | | |
| 6:15 | 14 | | 13 | | | 18:15 | 40 | | 47 | | |
| 6:30 | 17 | | 16 | | | 18:30 | 39 | | 45 | | |
| 6:45 | 29 | 71 | 19 | 59 | 130 | 18:45 | 31 | 158 | 35 | 187 | 345 |
| 7:00 | 39 | | 24 | | | 19:00 | 37 | | 34 | | |
| 7:15 | 51 | | 25 | | | 19:15 | 21 | | 48 | | |
| 7:30 | 66 | | 50 | | | 19:30 | 32 | | 31 | | |
| 7:45 | 81 | 237 | 50 | 149 | 386 | 19:45 | 20 | 110 | 18 | 131 | 241 |
| 8:00 | 57 | | 68 | | | 20:00 | 26 | | 27 | | |
| 8:15 | 90 | | 73 | | | 20:15 | 16 | | 22 | | |
| 8:30 | 72 | | 115 | | | 20:30 | 19 | | 35 | | |
| 8:45 | 56 | 275 | 69 | 325 | 600 | 20:45 | 16 | 77 | 16 | 100 | 177 |
| 9:00 | 50 | | 44 | | | 21:00 | 13 | | 17 | | |
| 9:15 | 36 | | 29 | | | 21:15 | 14 | | 16 | | |
| 9:30 | 49 | | 32 | | | 21:30 | 15 | | 15 | | |
| 9:45 | 39 | 174 | 37 | 142 | 316 | 21:45 | 12 | 54 | 18 | 66 | 120 |
| 10:00 | 36 | | 39 | | | 22:00 | 12 | | 9 | | |
| 10:15 | 34 | | 53 | | | 22:15 | 8 | | 10 | | |
| 10:30 | 44 | | 41 | | | 22:30 | 8 | | 13 | | |
| 10:45 | 41 | 155 | 48 | 181 | 336 | 22:45 | 4 | 32 | 3 | 35 | 67 |
| 11:00 | 50 | | 43 | | | 23:00 | 7 | | 5 | | |
| 11:15 | 49 | | 42 | | | 23:15 | 3 | | 2 | | |
| 11:30 | 56 | | 50 | | | 23:30 | 3 | | 0 | | |
| 11:45 | 56 | 211 | 46 | 181 | 392 | 23:45 | 3 | 16 | 4 | 11 | 27 |
| **Total Vol.** | | 1206 | | 1100 | **2306** | | | 1857 | | 2000 | **3857** |

| **Daily Totals** | EB | WB | **Combined** |
|---|---|---|---|
| | 3063 | 3100 | **6163** |

| | **AM** | | | **PM** | | |
|---|---|---|---|---|---|---|
| **Split %** | 52.3% | 47.7% | **37.4%** | 48.1% | 51.9% | **62.6%** |
| **Peak Hour** | 7:45 | 8:00 | **7:45** | 16:30 | 16:45 | **16:30** |
| **Volume** | 300 | 325 | **606** | 273 | 292 | **557** |
| **P.H.F.** | 0.83 | 0.71 | **0.81** | 0.93 | 0.87 | **0.89** |

cs@aimtd.com Tell. 714 253 7888

Thursday, January 23, 2025 CITY: Huntington Beach PROJECT: SC5146

**ADT3 Farnsworth Ln south of Indianapolis Ave.** **Prepared by AimTD LLC tel. 714 253 7888**

| AM Period | NB | | SB | | | PM Period | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0:00 | 0 | | 1 | | | 12:00 | 8 | | 16 | | |
| 0:15 | 0 | | 0 | | | 12:15 | 22 | | 28 | | |
| 0:30 | 0 | | 0 | | | 12:30 | 21 | | 19 | | |
| 0:45 | 0 | 0 | 0 | 1 | 1 | 12:45 | 9 | 60 | 14 | 77 | 137 |
| 1:00 | 0 | | 0 | | | 13:00 | 13 | | 15 | | |
| 1:15 | 1 | | 0 | | | 13:15 | 9 | | 37 | | |
| 1:30 | 0 | | 1 | | | 13:30 | 11 | | 61 | | |
| 1:45 | 1 | 2 | 1 | 2 | 4 | 13:45 | 33 | 66 | 32 | 145 | 211 |
| 2:00 | 0 | | 0 | | | 14:00 | 40 | | 11 | | |
| 2:15 | 2 | | 1 | | | 14:15 | 14 | | 6 | | |
| 2:30 | 0 | | 1 | | | 14:30 | 9 | | 11 | | |
| 2:45 | 2 | 4 | 1 | 3 | 7 | 14:45 | 24 | 87 | 17 | 45 | 132 |
| 3:00 | 1 | | 0 | | | 15:00 | 19 | | 14 | | |
| 3:15 | 1 | | 1 | | | 15:15 | 21 | | 9 | | |
| 3:30 | 0 | | 1 | | | 15:30 | 13 | | 16 | | |
| 3:45 | 0 | 2 | 0 | 2 | 4 | 15:45 | 12 | 65 | 13 | 52 | 117 |
| 4:00 | 2 | | 0 | | | 16:00 | 19 | | 13 | | |
| 4:15 | 0 | | 0 | | | 16:15 | 11 | | 18 | | |
| 4:30 | 1 | | 0 | | | 16:30 | 13 | | 10 | | |
| 4:45 | 0 | 3 | 0 | 0 | 3 | 16:45 | 9 | 52 | 12 | 53 | 105 |
| 5:00 | 2 | | 0 | | | 17:00 | 9 | | 15 | | |
| 5:15 | 1 | | 0 | | | 17:15 | 16 | | 11 | | |
| 5:30 | 1 | | 0 | | | 17:30 | 7 | | 15 | | |
| 5:45 | 4 | 8 | 1 | 1 | 9 | 17:45 | 13 | 45 | 10 | 51 | 96 |
| 6:00 | 4 | | 2 | | | 18:00 | 11 | | 9 | | |
| 6:15 | 5 | | 1 | | | 18:15 | 8 | | 7 | | |
| 6:30 | 7 | | 1 | | | 18:30 | 6 | | 9 | | |
| 6:45 | 7 | 23 | 5 | 9 | 32 | 18:45 | 7 | 32 | 10 | 35 | 67 |
| 7:00 | 3 | | 6 | | | 19:00 | 2 | | 4 | | |
| 7:15 | 12 | | 9 | | | 19:15 | 4 | | 7 | | |
| 7:30 | 14 | | 15 | | | 19:30 | 3 | | 7 | | |
| 7:45 | 12 | 41 | 12 | 42 | 83 | 19:45 | 4 | 13 | 5 | 23 | 36 |
| 8:00 | 15 | | 26 | | | 20:00 | 12 | | 6 | | |
| 8:15 | 14 | | 74 | | | 20:15 | 4 | | 6 | | |
| 8:30 | 50 | | 121 | | | 20:30 | 3 | | 10 | | |
| 8:45 | 42 | 121 | 13 | 234 | 355 | 20:45 | 4 | 23 | 6 | 28 | 51 |
| 9:00 | 8 | | 8 | | | 21:00 | 0 | | 0 | | |
| 9:15 | 14 | | 7 | | | 21:15 | 4 | | 5 | | |
| 9:30 | 4 | | 6 | | | 21:30 | 6 | | 3 | | |
| 9:45 | 9 | 35 | 2 | 23 | 58 | 21:45 | 2 | 12 | 3 | 11 | 23 |
| 10:00 | 8 | | 11 | | | 22:00 | 2 | | 1 | | |
| 10:15 | 10 | | 8 | | | 22:15 | 2 | | 0 | | |
| 10:30 | 9 | | 5 | | | 22:30 | 1 | | 3 | | |
| 10:45 | 11 | 38 | 6 | 30 | 68 | 22:45 | 0 | 5 | 0 | 4 | 9 |
| 11:00 | 10 | | 9 | | | 23:00 | 0 | | 1 | | |
| 11:15 | 8 | | 8 | | | 23:15 | 1 | | 1 | | |
| 11:30 | 12 | | 5 | | | 23:30 | 1 | | 1 | | |
| 11:45 | 11 | 41 | 8 | 30 | 71 | 23:45 | 0 | 2 | 1 | 4 | 6 |
| **Total Vol.** | | 318 | | 377 | **695** | | | 462 | | 528 | **990** |

**Daily Totals**

| NB | SB | Combined |
|---|---|---|
| 780 | 905 | **1685** |

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| **Split %** | 45.8% | 54.2% | **41.2%** | 46.7% | 53.3% | **58.8%** |
| **Peak Hour** | 8:00 | 8:00 | **8:00** | 13:30 | 13:00 | **13:15** |
| **Volume** | 121 | 234 | **355** | 98 | 145 | **234** |
| **P.H.F.** | 0.61 | 0.48 | **0.52** | 0.61 | 0.59 | **0.81** |

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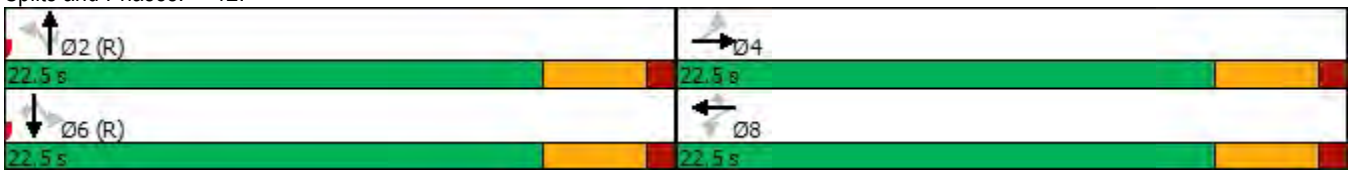
# Appendix B—Synchro Reports [2025 Existing]

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 66 | 129 | 27 | 29 | 124 | 126 | 41 | 882 | 49 | 106 | 813 | 67 |
| Future Volume (vph) | 66 | 129 | 27 | 29 | 124 | 126 | 41 | 882 | 49 | 106 | 813 | 67 |
| Ideal Flow (vphpl) | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frt | | 0.974 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1583 | 1623 | 0 | 1583 | 1667 | 1417 | 1583 | 4550 | 1417 | 1583 | 4550 | 1417 |
| Flt Permitted | 0.671 | | | 0.650 | | | 0.285 | | | 0.254 | | |
| Satd. Flow (perm) | 1118 | 1623 | 0 | 1083 | 1667 | 1417 | 475 | 4550 | 1417 | 423 | 4550 | 1417 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 28 | | | | 43 | | | 53 | | | 73 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 172 | | | 195 | | | 308 | | | 252 | |
| Travel Time (s) | | 3.9 | | | 4.4 | | | 7.0 | | | 5.7 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 72 | 140 | 29 | 32 | 135 | 137 | 45 | 959 | 53 | 115 | 884 | 73 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 72 | 169 | 0 | 32 | 135 | 137 | 45 | 959 | 53 | 115 | 884 | 73 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Minimum Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (%) | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Yellow Time (s) | 3.5 | 3.5 | | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| v/c Ratio | 0.16 | 0.25 | | 0.07 | 0.20 | 0.23 | 0.24 | 0.53 | 0.09 | 0.68 | 0.49 | 0.12 |
| Control Delay | 9.9 | 8.8 | | 9.0 | 9.9 | 7.8 | 13.0 | 11.6 | 3.7 | 37.9 | 11.2 | 3.4 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 9.9 | 8.8 | | 9.0 | 9.9 | 7.8 | 13.0 | 11.6 | 3.7 | 37.9 | 11.2 | 3.4 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOS | A | A | | A | A | A | B | B | A | D | B | A |
| Approach Delay | | 9.1 | | | 8.8 | | | 11.2 | | | 13.5 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 45 | | | |
| Actuated Cycle Length: 45 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Pretimed | | | |
| Maximum v/c Ratio: 0.68 | | | |
| Intersection Signal Delay: 11.7 | | Intersection LOS: B | |
| Intersection Capacity Utilization 54.2% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12:





| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 250 | 26 | 22 | 261 | 25 | 22 |
| Future Volume (vph) | 250 | 26 | 22 | 261 | 25 | 22 |
| Ideal Flow (vphpl) | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 0.987 | | | | 0.936 | |
| Flt Protected | | | 0.950 | | 0.974 | |
| Satd. Flow (prot) | 1645 | 0 | 1583 | 1667 | 1519 | 0 |
| Flt Permitted | | | 0.950 | | 0.974 | |
| Satd. Flow (perm) | 1645 | 0 | 1583 | 1667 | 1519 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 161 | | | 210 | 203 | |
| Travel Time (s) | 3.7 | | | 4.8 | 4.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 272 | 28 | 24 | 284 | 27 | 24 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 300 | 0 | 24 | 284 | 51 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 30.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

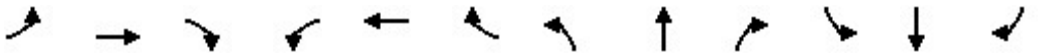
| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 250 | 26 | 22 | 261 | 25 | 22 |
| Future Vol, veh/h | 250 | 26 | 22 | 261 | 25 | 22 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 0 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 272 | 28 | 24 | 284 | 27 | 24 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 300 | 0 | 618 | 286 |
| Stage 1 | - | - | - | - | 286 | - |
| Stage 2 | - | - | - | - | 332 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1261 | - | 453 | 753 |
| Stage 1 | - | - | - | - | 763 | - |
| Stage 2 | - | - | - | - | 727 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1261 | - | 444 | 753 |
| Mov Cap-2 Maneuver | - | - | - | - | 444 | - |
| Stage 1 | - | - | - | - | 763 | - |
| Stage 2 | - | - | - | - | 713 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.6 | 12.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 550 | - | - | 1261 | - |
| HCM Lane V/C Ratio | 0.093 | - | - | 0.019 | - |
| HCM Control Delay (s) | 12.2 | - | - | 7.9 | - |
| HCM Lane LOS | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 0.1 | - |

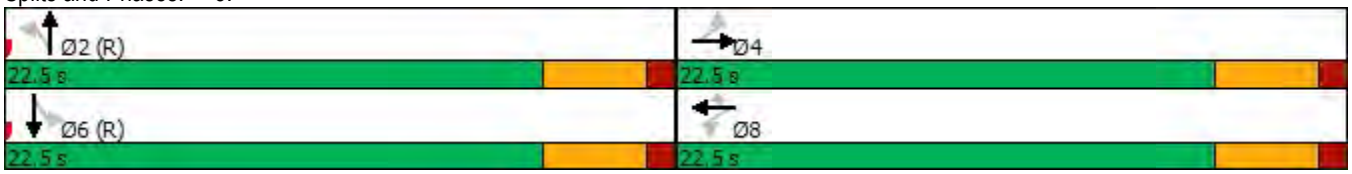


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 60 | 192 | 36 | 37 | 196 | 53 | 54 | 478 | 25 | 43 | 355 | 61 |
| Future Volume (vph) | 60 | 192 | 36 | 37 | 196 | 53 | 54 | 478 | 25 | 43 | 355 | 61 |
| Ideal Flow (vphpl) | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.976 | | | | 0.850 | | 0.993 | | | 0.978 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1583 | 3091 | 0 | 1583 | 1667 | 1417 | 1583 | 3144 | 0 | 1583 | 1630 | 0 |
| Flt Permitted | 0.625 | | | 0.598 | | | 0.375 | | | 0.432 | | |
| Satd. Flow (perm) | 1042 | 3091 | 0 | 997 | 1667 | 1417 | 625 | 3144 | 0 | 720 | 1630 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 39 | | | | 58 | | 14 | | | 23 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 162 | | | 196 | | | 104 | | | 136 | |
| Travel Time (s) | | 3.7 | | | 4.5 | | | 2.4 | | | 3.1 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 65 | 209 | 39 | 40 | 213 | 58 | 59 | 520 | 27 | 47 | 386 | 66 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 65 | 248 | 0 | 40 | 213 | 58 | 59 | 547 | 0 | 47 | 452 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | | 6 | | |
| Minimum Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (%) | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Yellow Time (s) | 3.5 | 3.5 | | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | | 0.40 | 0.40 | |
| v/c Ratio | 0.16 | 0.20 | | 0.10 | 0.32 | 0.10 | 0.24 | 0.43 | | 0.16 | 0.68 | |
| Control Delay | 9.9 | 7.9 | | 9.4 | 11.0 | 3.6 | 12.0 | 10.9 | | 10.5 | 17.3 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 9.9 | 7.9 | | 9.4 | 11.0 | 3.6 | 12.0 | 10.9 | | 10.5 | 17.3 | |

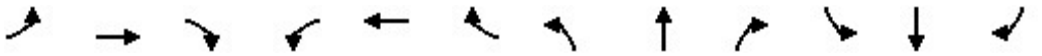
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOS | A | A | | A | B | A | B | B | | B | B | |
| Approach Delay | | 8.3 | | | 9.4 | | | 11.0 | | | 16.7 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 45 | | | |
| Actuated Cycle Length: 45 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 50 | | | |
| Control Type: Pretimed | | | |
| Maximum v/c Ratio: 0.68 | | | |
| Intersection Signal Delay: 11.9 | | Intersection LOS: B | |
| Intersection Capacity Utilization 59.9% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 3:



# Appendix C—Synchro Reports [2026 No Project]

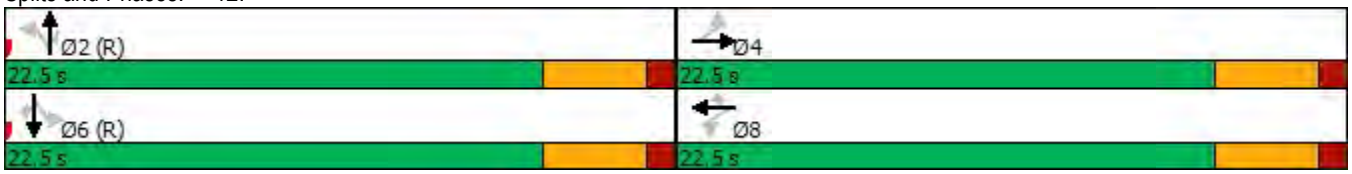


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 67 | 130 | 27 | 29 | 125 | 127 | 41 | 891 | 49 | 107 | 821 | 68 |
| Future Volume (vph) | 67 | 130 | 27 | 29 | 125 | 127 | 41 | 891 | 49 | 107 | 821 | 68 |
| Ideal Flow (vphpl) | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frt | | 0.974 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1583 | 1623 | 0 | 1583 | 1667 | 1417 | 1583 | 4550 | 1417 | 1583 | 4550 | 1417 |
| Flt Permitted | 0.670 | | | 0.650 | | | 0.281 | | | 0.250 | | |
| Satd. Flow (perm) | 1117 | 1623 | 0 | 1083 | 1667 | 1417 | 468 | 4550 | 1417 | 417 | 4550 | 1417 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 27 | | | | 42 | | | 53 | | | 74 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 172 | | | 195 | | | 308 | | | 252 | |
| Travel Time (s) | | 3.9 | | | 4.4 | | | 7.0 | | | 5.7 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 73 | 141 | 29 | 32 | 136 | 138 | 45 | 968 | 53 | 116 | 892 | 74 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 73 | 170 | 0 | 32 | 136 | 138 | 45 | 968 | 53 | 116 | 892 | 74 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Minimum Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (%) | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Yellow Time (s) | 3.5 | 3.5 | | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| v/c Ratio | 0.16 | 0.26 | | 0.07 | 0.20 | 0.23 | 0.24 | 0.53 | 0.09 | 0.70 | 0.49 | 0.12 |
| Control Delay | 9.9 | 8.9 | | 9.0 | 9.9 | 7.9 | 13.1 | 11.6 | 3.7 | 40.1 | 11.2 | 3.4 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 9.9 | 8.9 | | 9.0 | 9.9 | 7.9 | 13.1 | 11.6 | 3.7 | 40.1 | 11.2 | 3.4 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOS | A | A | | A | A | A | B | B | A | D | B | A |
| Approach Delay | | 9.2 | | | 8.9 | | | 11.3 | | | 13.8 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 45 | | | |
| Actuated Cycle Length: 45 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Pretimed | | | |
| Maximum v/c Ratio: 0.70 | | | |
| Intersection Signal Delay: 11.8 | | Intersection LOS: B | |
| Intersection Capacity Utilization 54.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12:





| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 253 | 26 | 22 | 264 | 25 | 22 |
| Future Volume (vph) | 253 | 26 | 22 | 264 | 25 | 22 |
| Ideal Flow (vphpl) | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 0.988 | | | | 0.936 | |
| Flt Protected | | | 0.950 | | 0.974 | |
| Satd. Flow (prot) | 1647 | 0 | 1583 | 1667 | 1519 | 0 |
| Flt Permitted | | | 0.950 | | 0.974 | |
| Satd. Flow (perm) | 1647 | 0 | 1583 | 1667 | 1519 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 161 | | | 210 | 203 | |
| Travel Time (s) | 3.7 | | | 4.8 | 4.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 275 | 28 | 24 | 287 | 27 | 24 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 303 | 0 | 24 | 287 | 51 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 30.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

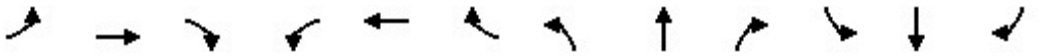
| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 253 | 26 | 22 | 264 | 25 | 22 |
| Future Vol, veh/h | 253 | 26 | 22 | 264 | 25 | 22 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 0 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 275 | 28 | 24 | 287 | 27 | 24 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 303 | 0 | 624 | 289 |
| Stage 1 | - | - | - | - | 289 | - |
| Stage 2 | - | - | - | - | 335 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1258 | - | 449 | 750 |
| Stage 1 | - | - | - | - | 760 | - |
| Stage 2 | - | - | - | - | 725 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1258 | - | 440 | 750 |
| Mov Cap-2 Maneuver | - | - | - | - | 440 | - |
| Stage 1 | - | - | - | - | 760 | - |
| Stage 2 | - | - | - | - | 711 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.6 | 12.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 546 | - | - | 1258 | - |
| HCM Lane V/C Ratio | 0.094 | - | - | 0.019 | - |
| HCM Control Delay (s) | 12.3 | - | - | 7.9 | - |
| HCM Lane LOS | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 0.1 | - |

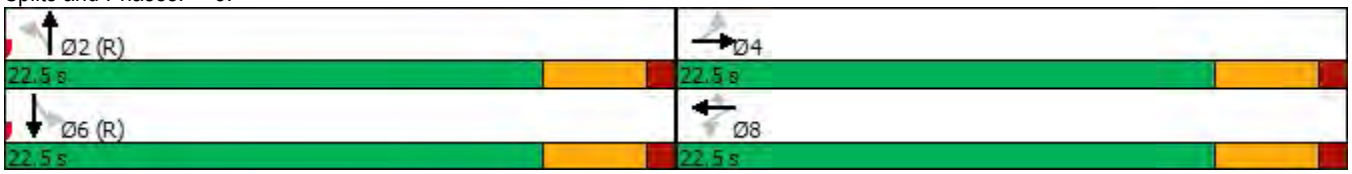


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 61 | 194 | 36 | 37 | 198 | 53 | 55 | 483 | 25 | 43 | 359 | 62 |
| Future Volume (vph) | 61 | 194 | 36 | 37 | 198 | 53 | 55 | 483 | 25 | 43 | 359 | 62 |
| Ideal Flow (vphpl) | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.977 | | | | 0.850 | | 0.993 | | | 0.978 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1583 | 3094 | 0 | 1583 | 1667 | 1417 | 1583 | 3144 | 0 | 1583 | 1630 | 0 |
| Flt Permitted | 0.624 | | | 0.597 | | | 0.369 | | | 0.428 | | |
| Satd. Flow (perm) | 1040 | 3094 | 0 | 995 | 1667 | 1417 | 615 | 3144 | 0 | 713 | 1630 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 39 | | | | 58 | | 14 | | | 23 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 162 | | | 196 | | | 104 | | | 136 | |
| Travel Time (s) | | 3.7 | | | 4.5 | | | 2.4 | | | 3.1 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 66 | 211 | 39 | 40 | 215 | 58 | 60 | 525 | 27 | 47 | 390 | 67 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 66 | 250 | 0 | 40 | 215 | 58 | 60 | 552 | 0 | 47 | 457 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | | 6 | | |
| Minimum Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (%) | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Yellow Time (s) | 3.5 | 3.5 | | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | | 0.40 | 0.40 | |
| v/c Ratio | 0.16 | 0.20 | | 0.10 | 0.32 | 0.10 | 0.24 | 0.44 | | 0.16 | 0.69 | |
| Control Delay | 9.9 | 7.9 | | 9.4 | 11.0 | 3.6 | 12.2 | 10.9 | | 10.6 | 17.7 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 9.9 | 7.9 | | 9.4 | 11.0 | 3.6 | 12.2 | 10.9 | | 10.6 | 17.7 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOS | A | A | | A | B | A | B | B | | B | B | |
| Approach Delay | | 8.3 | | | 9.4 | | | 11.0 | | | 17.0 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 45 | | | |
| Actuated Cycle Length: 45 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 50 | | | |
| Control Type: Pretimed | | | |
| Maximum v/c Ratio: 0.69 | | | |
| Intersection Signal Delay: 12.0 | | Intersection LOS: B | |
| Intersection Capacity Utilization 60.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 3:



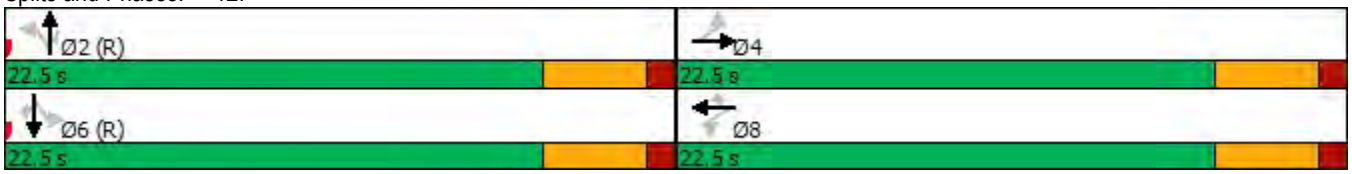
# Appendix D—Synchro Reports [2025 Project]

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 66 | 133 | 27 | 29 | 125 | 127 | 41 | 882 | 49 | 107 | 813 | 67 |
| Future Volume (vph) | 66 | 133 | 27 | 29 | 125 | 127 | 41 | 882 | 49 | 107 | 813 | 67 |
| Ideal Flow (vphpl) | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frt | | 0.975 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1583 | 1625 | 0 | 1583 | 1667 | 1417 | 1583 | 4550 | 1417 | 1583 | 4550 | 1417 |
| Flt Permitted | 0.670 | | | 0.647 | | | 0.285 | | | 0.254 | | |
| Satd. Flow (perm) | 1117 | 1625 | 0 | 1078 | 1667 | 1417 | 475 | 4550 | 1417 | 423 | 4550 | 1417 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 27 | | | | 43 | | | 53 | | | 73 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 172 | | | 195 | | | 308 | | | 252 | |
| Travel Time (s) | | 3.9 | | | 4.4 | | | 7.0 | | | 5.7 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 72 | 145 | 29 | 32 | 136 | 138 | 45 | 959 | 53 | 116 | 884 | 73 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 72 | 174 | 0 | 32 | 136 | 138 | 45 | 959 | 53 | 116 | 884 | 73 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Minimum Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (%) | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Yellow Time (s) | 3.5 | 3.5 | | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| v/c Ratio | 0.16 | 0.26 | | 0.07 | 0.20 | 0.23 | 0.24 | 0.53 | 0.09 | 0.69 | 0.49 | 0.12 |
| Control Delay | 9.9 | 8.9 | | 9.0 | 9.9 | 7.8 | 13.0 | 11.6 | 3.7 | 38.5 | 11.2 | 3.4 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 9.9 | 8.9 | | 9.0 | 9.9 | 7.8 | 13.0 | 11.6 | 3.7 | 38.5 | 11.2 | 3.4 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOS | A | A | | A | A | A | B | B | A | D | B | A |
| Approach Delay | | 9.2 | | | 8.9 | | | 11.2 | | | 13.6 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 45 | | | |
| Actuated Cycle Length: 45 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Pretimed | | | |
| Maximum v/c Ratio: 0.69 | | | |
| Intersection Signal Delay: 11.7 | | Intersection LOS: B | |
| Intersection Capacity Utilization 54.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12:





| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 250 | 33 | 26 | 261 | 27 | 25 |
| Future Volume (vph) | 250 | 33 | 26 | 261 | 27 | 25 |
| Ideal Flow (vphpl) | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 0.984 | | | | 0.935 | |
| Flt Protected | | | 0.950 | | 0.975 | |
| Satd. Flow (prot) | 1640 | 0 | 1583 | 1667 | 1519 | 0 |
| Flt Permitted | | | 0.950 | | 0.975 | |
| Satd. Flow (perm) | 1640 | 0 | 1583 | 1667 | 1519 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 161 | | | 210 | 203 | |
| Travel Time (s) | 3.7 | | | 4.8 | 4.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 272 | 36 | 28 | 284 | 29 | 27 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 308 | 0 | 28 | 284 | 56 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 33.7% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

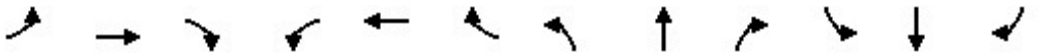
| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 250 | 33 | 26 | 261 | 27 | 25 |
| Future Vol, veh/h | 250 | 33 | 26 | 261 | 27 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 0 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 272 | 36 | 28 | 284 | 29 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 308 | 0 | 630 | 290 |
| Stage 1 | - | - | - | - | 290 | - |
| Stage 2 | - | - | - | - | 340 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1253 | - | 446 | 749 |
| Stage 1 | - | - | - | - | 759 | - |
| Stage 2 | - | - | - | - | 721 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1253 | - | 436 | 749 |
| Mov Cap-2 Maneuver | - | - | - | - | 436 | - |
| Stage 1 | - | - | - | - | 759 | - |
| Stage 2 | - | - | - | - | 705 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.7 | 12.4 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 546 | - | - | 1253 | - |
| HCM Lane V/C Ratio | 0.104 | - | - | 0.023 | - |
| HCM Control Delay (s) | 12.4 | - | - | 7.9 | - |
| HCM Lane LOS | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 0.1 | - |

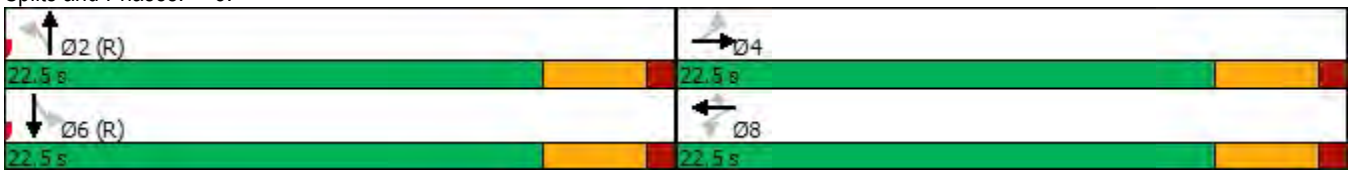


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 61 | 194 | 36 | 37 | 198 | 53 | 55 | 478 | 25 | 43 | 355 | 62 |
| Future Volume (vph) | 61 | 194 | 36 | 37 | 198 | 53 | 55 | 478 | 25 | 43 | 355 | 62 |
| Ideal Flow (vphpl) | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.977 | | | | 0.850 | | 0.993 | | | 0.978 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1583 | 3094 | 0 | 1583 | 1667 | 1417 | 1583 | 3144 | 0 | 1583 | 1630 | 0 |
| Flt Permitted | 0.624 | | | 0.597 | | | 0.374 | | | 0.432 | | |
| Satd. Flow (perm) | 1040 | 3094 | 0 | 995 | 1667 | 1417 | 623 | 3144 | 0 | 720 | 1630 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 39 | | | | 58 | | 14 | | | 23 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 162 | | | 196 | | | 104 | | | 136 | |
| Travel Time (s) | | 3.7 | | | 4.5 | | | 2.4 | | | 3.1 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 66 | 211 | 39 | 40 | 215 | 58 | 60 | 520 | 27 | 47 | 386 | 67 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 66 | 250 | 0 | 40 | 215 | 58 | 60 | 547 | 0 | 47 | 453 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | | 6 | | |
| Minimum Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (%) | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Yellow Time (s) | 3.5 | 3.5 | | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | | 0.40 | 0.40 | |
| v/c Ratio | 0.16 | 0.20 | | 0.10 | 0.32 | 0.10 | 0.24 | 0.43 | | 0.16 | 0.68 | |
| Control Delay | 9.9 | 7.9 | | 9.4 | 11.0 | 3.6 | 12.1 | 10.9 | | 10.5 | 17.4 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 9.9 | 7.9 | | 9.4 | 11.0 | 3.6 | 12.1 | 10.9 | | 10.5 | 17.4 | |

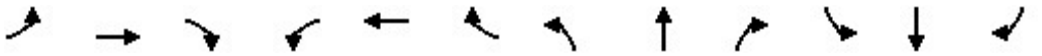
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOS | A | A | | A | B | A | B | B | | B | B | |
| Approach Delay | | 8.3 | | | 9.4 | | | 11.0 | | | 16.7 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 45 | | | |
| Actuated Cycle Length: 45 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 50 | | | |
| Control Type: Pretimed | | | |
| Maximum v/c Ratio: 0.68 | | | |
| Intersection Signal Delay: 11.9 | | Intersection LOS: B | |
| Intersection Capacity Utilization 60.1% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 3:



# Appendix E—Synchro Reports [2026 Project]

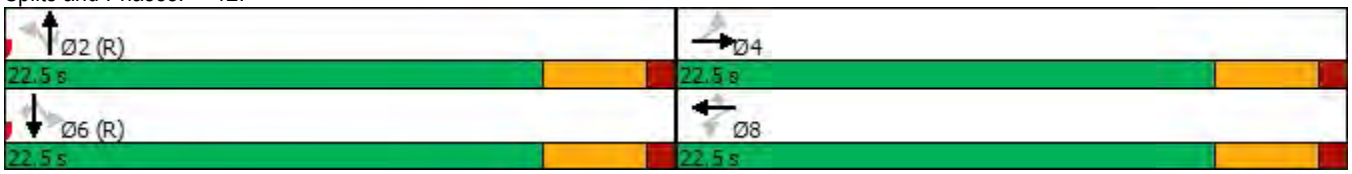


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 67 | 134 | 27 | 29 | 126 | 128 | 41 | 891 | 51 | 108 | 821 | 68 |
| Future Volume (vph) | 67 | 134 | 27 | 29 | 126 | 128 | 41 | 891 | 51 | 108 | 821 | 68 |
| Ideal Flow (vphpl) | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frt | | 0.975 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1583 | 1625 | 0 | 1583 | 1667 | 1417 | 1583 | 4550 | 1417 | 1583 | 4550 | 1417 |
| Flt Permitted | 0.669 | | | 0.647 | | | 0.281 | | | 0.250 | | |
| Satd. Flow (perm) | 1115 | 1625 | 0 | 1078 | 1667 | 1417 | 468 | 4550 | 1417 | 417 | 4550 | 1417 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 26 | | | | 42 | | | 55 | | | 74 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 172 | | | 195 | | | 308 | | | 252 | |
| Travel Time (s) | | 3.9 | | | 4.4 | | | 7.0 | | | 5.7 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 73 | 146 | 29 | 32 | 137 | 139 | 45 | 968 | 55 | 117 | 892 | 74 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 73 | 175 | 0 | 32 | 137 | 139 | 45 | 968 | 55 | 117 | 892 | 74 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Minimum Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (%) | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Yellow Time (s) | 3.5 | 3.5 | | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| v/c Ratio | 0.16 | 0.26 | | 0.07 | 0.21 | 0.23 | 0.24 | 0.53 | 0.09 | 0.70 | 0.49 | 0.12 |
| Control Delay | 9.9 | 9.0 | | 9.0 | 9.9 | 7.9 | 13.1 | 11.6 | 3.7 | 40.8 | 11.2 | 3.4 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 9.9 | 9.0 | | 9.0 | 9.9 | 7.9 | 13.1 | 11.6 | 3.7 | 40.8 | 11.2 | 3.4 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOS | A | A | | A | A | A | B | B | A | D | B | A |
| Approach Delay | | 9.3 | | | 8.9 | | | 11.3 | | | 13.9 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 45 | | | |
| Actuated Cycle Length: 45 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Pretimed | | | |
| Maximum v/c Ratio: 0.70 | | | |
| Intersection Signal Delay: 11.9 | | Intersection LOS: B | |
| Intersection Capacity Utilization 54.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 12:





| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 253 | 33 | 26 | 264 | 27 | 25 |
| Future Volume (vph) | 253 | 33 | 26 | 264 | 27 | 25 |
| Ideal Flow (vphpl) | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 0.984 | | | | 0.935 | |
| Flt Protected | | | 0.950 | | 0.975 | |
| Satd. Flow (prot) | 1640 | 0 | 1583 | 1667 | 1519 | 0 |
| Flt Permitted | | | 0.950 | | 0.975 | |
| Satd. Flow (perm) | 1640 | 0 | 1583 | 1667 | 1519 | 0 |
| Link Speed (mph) | 30 | | | 30 | 30 | |
| Link Distance (ft) | 161 | | | 210 | 203 | |
| Travel Time (s) | 3.7 | | | 4.8 | 4.6 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 275 | 36 | 28 | 287 | 29 | 27 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 311 | 0 | 28 | 287 | 56 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 33.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

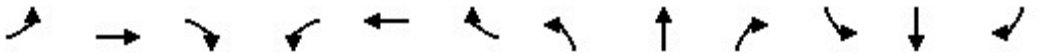
| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 253 | 33 | 26 | 264 | 27 | 25 |
| Future Vol, veh/h | 253 | 33 | 26 | 264 | 27 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 0 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 275 | 36 | 28 | 287 | 29 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 311 | 0 | 636 | 293 |
| Stage 1 | - | - | - | - | 293 | - |
| Stage 2 | - | - | - | - | 343 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1249 | - | 442 | 746 |
| Stage 1 | - | - | - | - | 757 | - |
| Stage 2 | - | - | - | - | 719 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1249 | - | 432 | 746 |
| Mov Cap-2 Maneuver | - | - | - | - | 432 | - |
| Stage 1 | - | - | - | - | 757 | - |
| Stage 2 | - | - | - | - | 703 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.7 | 12.4 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 542 | - | - | 1249 | - |
| HCM Lane V/C Ratio | 0.104 | - | - | 0.023 | - |
| HCM Control Delay (s) | 12.4 | - | - | 7.9 | - |
| HCM Lane LOS | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 0.1 | - |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 62 | 196 | 36 | 37 | 200 | 54 | 56 | 483 | 25 | 43 | 359 | 63 |
| Future Volume (vph) | 62 | 196 | 36 | 37 | 200 | 54 | 56 | 483 | 25 | 43 | 359 | 63 |
| Ideal Flow (vphpl) | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.977 | | | | 0.850 | | 0.993 | | | 0.978 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1583 | 3094 | 0 | 1583 | 1667 | 1417 | 1583 | 3144 | 0 | 1583 | 1630 | 0 |
| Flt Permitted | 0.622 | | | 0.596 | | | 0.368 | | | 0.428 | | |
| Satd. Flow (perm) | 1037 | 3094 | 0 | 993 | 1667 | 1417 | 613 | 3144 | 0 | 713 | 1630 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 39 | | | | 59 | | 14 | | | 23 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 162 | | | 196 | | | 104 | | | 136 | |
| Travel Time (s) | | 3.7 | | | 4.5 | | | 2.4 | | | 3.1 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 67 | 213 | 39 | 40 | 217 | 59 | 61 | 525 | 27 | 47 | 390 | 68 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 67 | 252 | 0 | 40 | 217 | 59 | 61 | 552 | 0 | 47 | 458 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | 8 | 2 | | | 6 | | |
| Minimum Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (s) | 22.5 | 22.5 | | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (%) | 50.0% | 50.0% | | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | | 50.0% | 50.0% | |
| Maximum Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Yellow Time (s) | 3.5 | 3.5 | | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 18.0 | 18.0 | | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | | 0.40 | 0.40 | |
| v/c Ratio | 0.16 | 0.20 | | 0.10 | 0.33 | 0.10 | 0.25 | 0.44 | | 0.16 | 0.69 | |
| Control Delay | 10.0 | 7.9 | | 9.4 | 11.1 | 3.6 | 12.3 | 10.9 | | 10.6 | 17.7 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 10.0 | 7.9 | | 9.4 | 11.1 | 3.6 | 12.3 | 10.9 | | 10.6 | 17.7 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOS | A | A | | A | B | A | B | B | | B | B | |
| Approach Delay | | 8.3 | | | 9.4 | | | 11.0 | | | 17.1 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 45 | | | |
| Actuated Cycle Length: 45 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 50 | | | |
| Control Type: Pretimed | | | |
| Maximum v/c Ratio: 0.69 | | | |
| Intersection Signal Delay: 12.0 | | Intersection LOS: B | |
| Intersection Capacity Utilization 60.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 3:

