NOTICE IS HEREBY GIVEN that the Roseville Joint Union High School District (RJUHSD or District) has completed an Initial Study for the following described project at the following location:

The District is the lead agency for the preparation and review of an Initial Study/Negative Declaration (IS/MND) for the proposed New District Office Project. The proposed project involves the construction of a new two-story, 26,526-square-foot District office and demolition of an existing, 7,376-square-foot District office. The new District office would allow the District to consolidate its administrative functions into one central facility and would result in a net increase of 19,150 square feet of building space. Currently, the District staff population on-site is approximately 24 persons. The project would also relocate 28 staff from various other District facilities to the new District office. The proposed project would not result in an increase in staff in the District. The newly constructed District office would provide a board room, restrooms, breakout rooms, conference rooms, offices, space for cubicles, and storage rooms. The footprint of the new District office would increase by 19,150 square feet. The location of the new building would be immediately south of the existing District office. The District office would be designed and constructed as a 37-foot-tall, two-story administration that would serve as District headquarters.

The Initial Study was completed in accordance with the District's Guidelines implementing the California Environmental Quality Act. This Initial Study was undertaken for the purpose of deciding whether the project may have a significant effect on the environment. On the basis of such Initial Study, the District Board of Trustees' staff have concluded that the project will not have a significant effect on the environment, and has, therefore, prepared a Draft Mitigated Negative Declaration. The Initial Study reflects the independent judgment of the District Board of Trustees.

1. The Project site is not on a list compiled pursuant to Government Code section 65962.5.

2. The proposed Project is not considered a project of statewide, regional or areawide significance.

3. The proposed Project will not affect highways or other facilities under the jurisdiction of the State Department of Transportation.

Copies of the Initial Study and Draft Mitigated Negative Declaration are on file at Placer County Clerk-Recorder's Office, 2954 Richardson Drive, Auburn, California 95603, and are available for public review. Electronic format of the document(s) are also available for public review at https://www.rjuhsd.us or by contacting Scott Davis, Director of Facilities Development at scdavis@rjuhsd.us or (916) 782-4707 ext. 1213.

The 30-day public review period for the Initial Study and Draft Mitigated Negative Declaration is from **April 3, 2023 to May 3, 2023**. Any person wishing to comment on this matter must submit such comments, in writing, to the District prior to **May 3, 2023**. Comments of all Responsible Agencies are also requested.

If the District Board of Trustees finds that the project will not have a significant effect on the environment, it may adopt the Negative Declaration/Mitigated Negative Declaration. This means that the District Board of Trustees may proceed to consider the Project without the preparation of an Environmental Impact Report. The District Board of Trustees will consider this item at a regular public meeting on May 11, 2023, at 6:30 PM.

April 2023 | Initial Study

# NEW DISTRICT OFFICE PROJECT

Roseville Joint Union High School District

*Prepared for:*

**Roseville Joint Union High School District**
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PLACEWORKS

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# Acronyms and Abbreviations

| | |
|---|---|
| AAQS | ambient air quality standards |
| AB | Assembly Bill |
| ADT | average daily traffic |
| BMP | best management practices |
| CAL FIRE | California Department of Forestry and Fire Protection |
| CALGreen | California Green Building Standards Code |
| Caltrans | California Department of Transportation |
| CBC | California Building Code |
| CDFW | California Department of Fish and Wildlife |
| CEQA | California Environmental Quality Act |
| CFC | California Fire Code |
| CNEL | community noise equivalent level |
| CO | carbon monoxide |
| cy | cubic yard |
| dB | decibel |
| dBA | A-weighted decibel |
| DTSC | Department of Toxic Substances Control |
| EOP | emergency operations plan |
| FHSZ | fire hazard severity zone |
| FTA | Federal Transit Administration |
| GHG | greenhouse gas |
| HVAC | heating, ventilating, and air conditioning system |
| LCFS | low-carbon fuel standard |
| Leq | equivalent continuous noise level |
| Lmax | maximum noise level |
| LOS | level of service |
| $MTCO_2e$ | metric tons of $CO_2$-equivalent emissions |
| NOx | nitrogen oxides |
| NPDES | National Pollutant Discharge Elimination System |
| PCAPCD | Placer County Air Pollution Control District |
| PCTPA | Placer County Transportation Planning Agency |
| PG&E | Pacific Gas and Electric Company |
| $PM_{10}$ | coarse particulate matter |

## Acronyms and Abbreviations

| | |
|---|---|
| ppm | parts per million |
| PPV | peak particle velocity |
| PRC | Public Resources Code |
| ROG | reactive organic gas |
| RTP/SCS | regional transportation plan / sustainable communities strategy |
| SB | Senate Bill |
| SIP | State Implementation Plan |
| SRA | State responsibility area |
| SVAB | Sacramento Valley Air Basin |
| SWPPP | Stormwater Pollution Prevention Plan |
| SWRCB | State Water Resources Control Board |
| TAC | toxic air contaminant |
| USBR | United States Bureau of Reclamation |
| USFWS | United States Fish and Wildlife Service |
| VMT | vehicle miles traveled |

# 1. Introduction

The Roseville Joint Union High School District (District) intends to construct a new two-story District office to consolidate its administrative functions into a central facility on the existing District property at 1750 Cirby Way in Roseville, California.

## 1.1 PROJECT LOCATION

The project site is at 1750 Cirby Way in the southeastern portion of Roseville in Placer County, California. Roseville is in the upper Sacramento Valley, about 18 miles northeast of Sacramento, as shown in Figure 1, *Regional Location*. Roseville is bordered by the City of Citrus Heights to the south and the City of Rocklin to the northeast. The Sierra Nevada is about 30 miles to the east.

As shown in Figure 2, *Local Vicinity*, and Figure 3, *Aerial Photograph*, the approximately 2.5-acre project site is immediately south of Cirby Way. The project site comprises two parcels—Assessor's Parcel Numbers 469-340-010-000 and 469-280-049-000.

Regional access to the project site is provided via Interstate 80 (I-80) (see Figure 1, *Regional Location* and Figure 2, *Local Vicinity*). I-80 intersects Roseville from north to south. Local access to the project site is via Cirby Way and Old Auburn Road (see Figure 2, *Local Vicinity*).

## 1.2 ENVIRONMENTAL SETTING

### 1.2.1 Existing Land Use

As shown in Figure 3, *Aerial Photograph*, the project site consists of a parking lot, District office, and an empty grass lot to the northeast of the District office. The parking lot and District office are 2.13 acres (zoned P/QP), and the empty grass lot is 0.37 acres (zoned R-2). Vegetation on-site consists of native and ornamental landscaping with trees and shrubs scattered throughout the site. The eastern perimeter of the site has 13 mature native oak trees, and 28 mixed-species ornamental trees are scattered throughout the site. A majority of the site is developed with pavement and sidewalks. The project site is generally flat, with elevations from approximately 152 to 160 feet above mean sea level.

### 1.2.2 Surrounding Land Use

As shown in Figure 3, *Aerial Photograph*, the project site is surrounded by Oakmont High School to the south and west (zoned P/QP) and residential land uses to the north and east (zoned R-1 and R-2).

### 1.2.3 Surrounding Concurrent Approved Projects

In 2022, the District approved the Stadium Support Building Project at Oakmont High School. As shown on Figure 3, *Aerial Photograph*, the Stadium Support Building Project is immediately south of the proposed project site. Figure 4, *Approved Stadium Support Building Project Site Plan*, illustrates the Stadium Support Building Project's site design. This project involves the construction of a new stadium support building with space for ticketing, concessions, custodial, and restrooms at Oakmont High School. The Stadium Support Building Project will replace existing ticketing, concession, and restroom structures. The existing concrete and asphalt paving, fencing, and gates surrounding the existing buildings will be reconstructed. This project is planned to be completed by August 2023; however, the project may be completed earlier. Therefore, the Stadium Support Building Project at Oakmont High School as well as the proposed project could be under construction concurrently for up to three months.

## 1.3 PROJECT DESCRIPTION

Below is a detailed description of the proposed project's overall site plan and character, including the various development features/elements and on- and off-site improvements that would be implemented as a part of the project.

### 1.3.1 Site Plan and Character

The proposed new District Office Project would be constructed at 1750 Cirby Way, Roseville, California, on the existing district property. The proposed project involves the construction of a new two-story, 26,526-square-foot District office and demolition of an existing, 7,376-square-foot District office. The new office would allow the District to consolidate its administrative functions into one central facility.

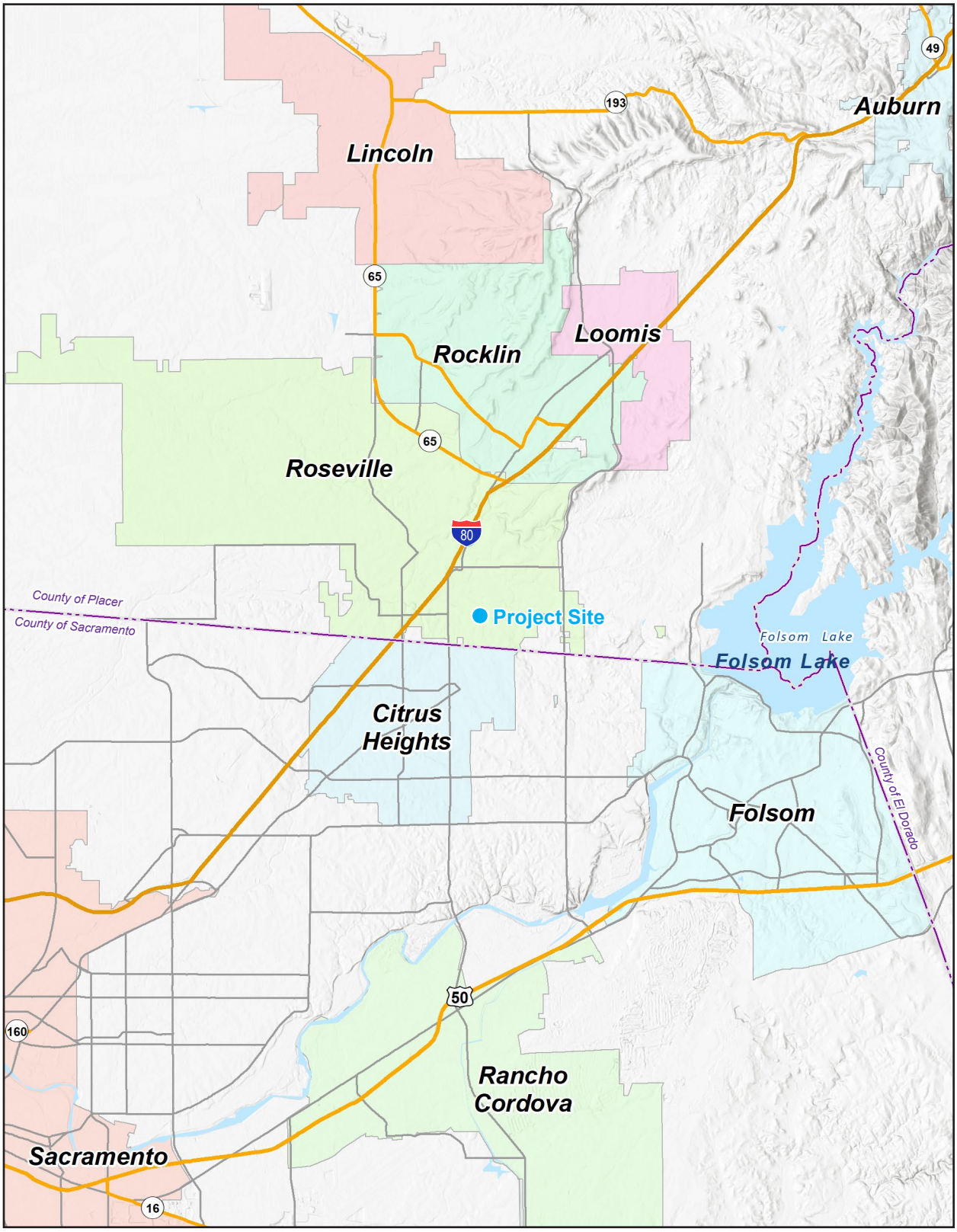
Figure 5, *Overall Site Plan*, illustrates the project's site design. The project would be designed as a contemporary administrative building with metal panels, stucco, glass, simulated wood siding, brick, and metal flashings.

### 1.3.2 Architectural Design and Character

As shown on Figure 6, *New Administration Building First Floor Layout*, and Figure 7, *New Administration Building Second Floor Layout,* the building would provide a board room, restrooms, breakout rooms, conference rooms, offices, space for cubicles, and storage rooms. The footprint of the new District office would increase by 19,150 square feet. The location of the new building would be immediately south of the existing District office. Primary entrance to the administrative building would be from the northern side of the building, which faces the parking lot and property entrance/exit. The District office would be designed and constructed as a 37-foot-tall, two-story administration building that would serve as District headquarters.

Other project features and improvements—such as architectural and landscape design and improvements; vehicular and pedestrian access and circulation improvements; infrastructure improvements; and administration operations—are discussed in detail below.

## Figure 1 - Regional Location




County Boundary

Note: Unincorporated county areas are shown in white.

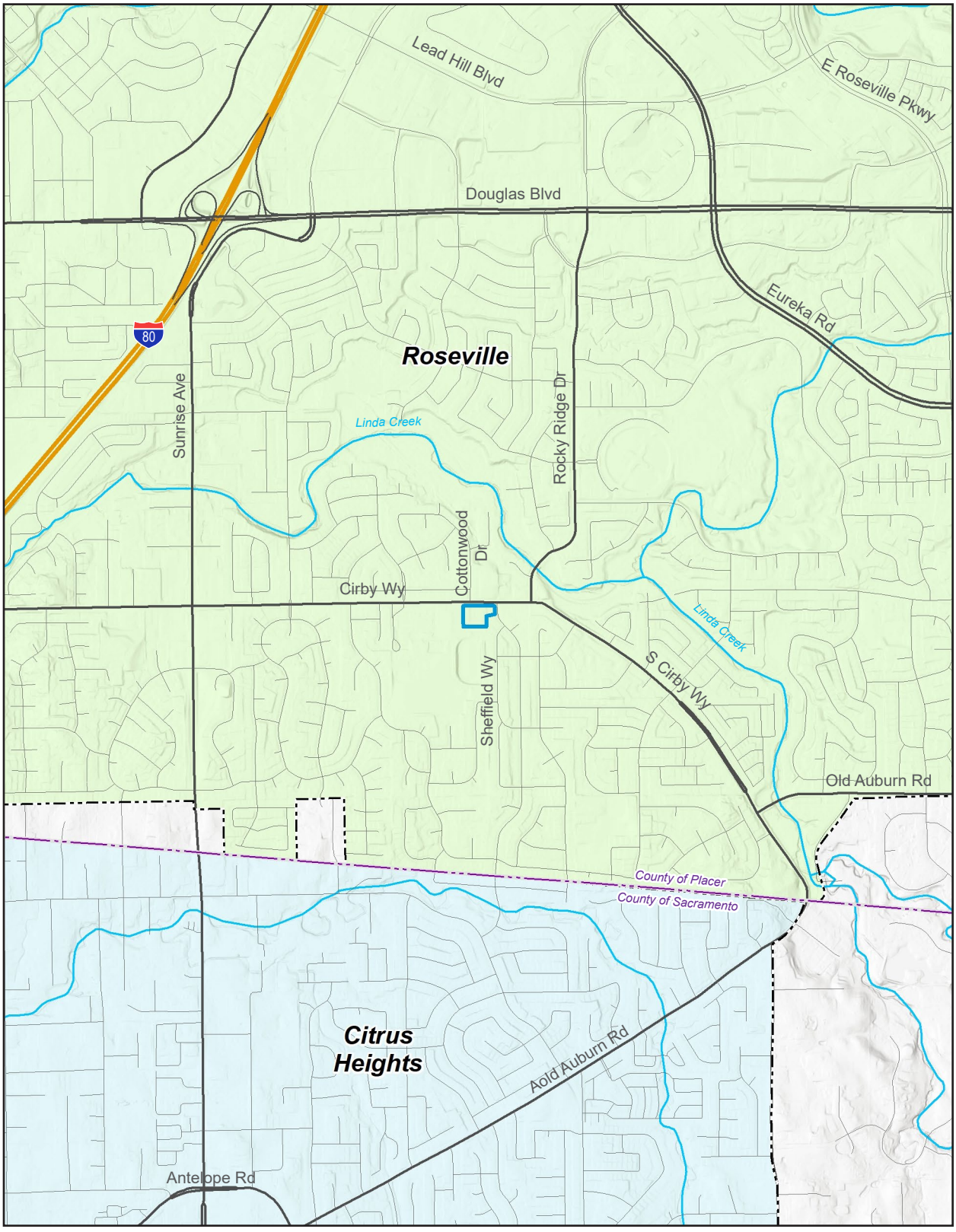
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Scale (Miles)

# 1. Introduction

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## Figure 2 - Local Vicinity




Note: Unincorporated county areas are shown in white.

*Source: Generated using ArcMap, 2022.*

# 1. Introduction

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## Figure 3 - Aerial Photograph



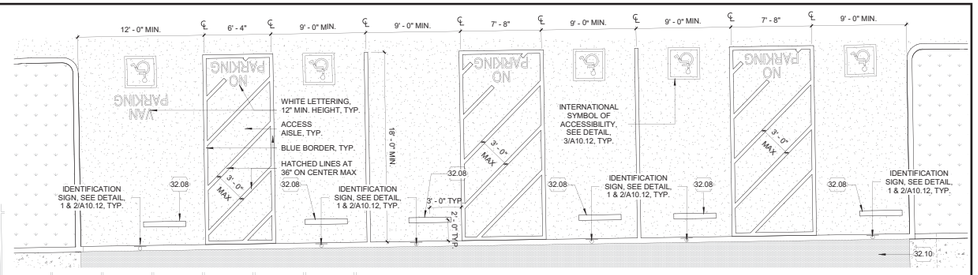

Source: Nearmap, Inc., 2022.

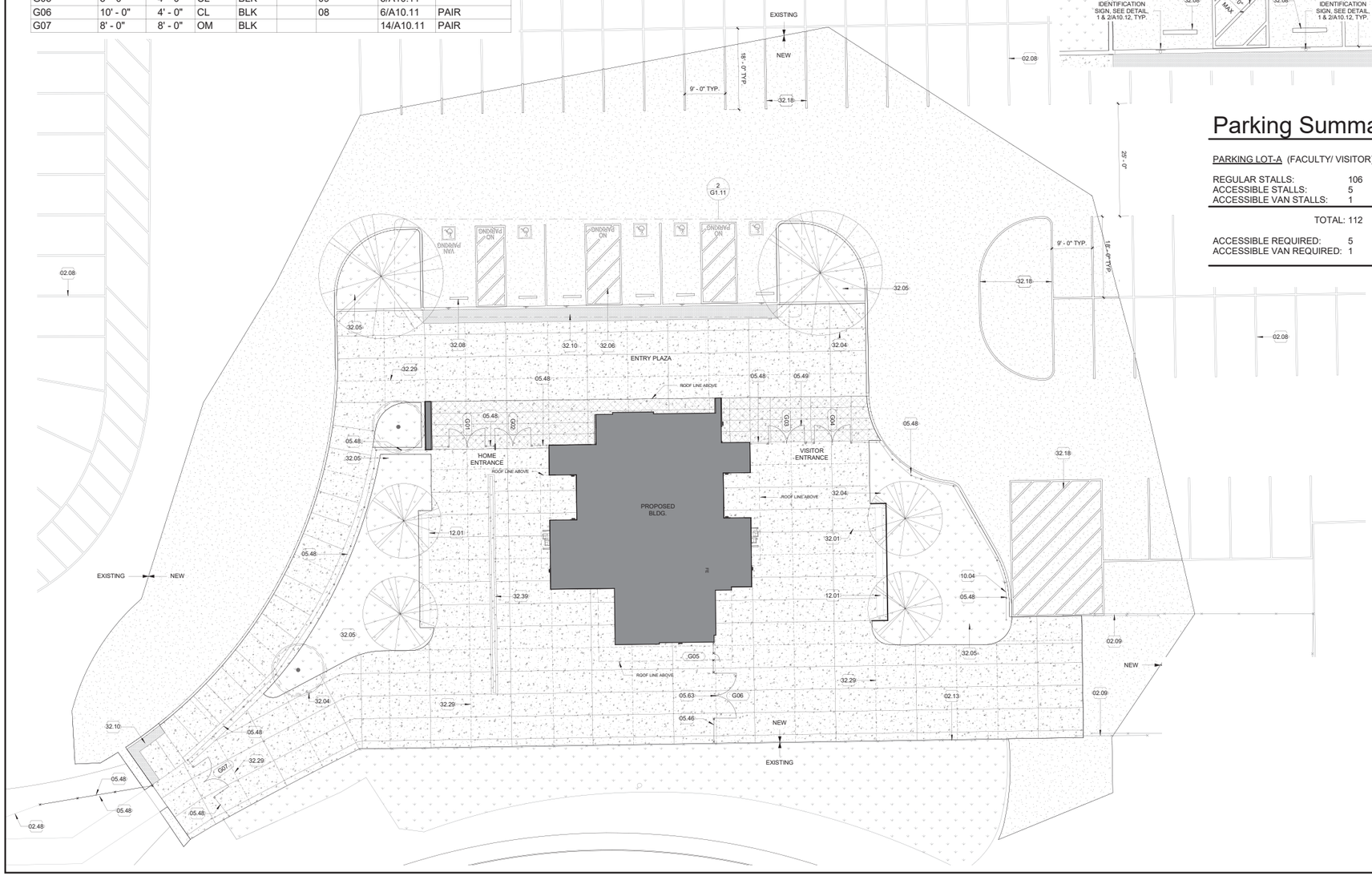
# 1. Introduction

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# Figure 4 - Approved Stadium Support Building Project Site Plan

| GATE SCHEDULE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DOOR NUMBER | WIDTH | HEIGHT | Material | Finish | PANIC | HARDWARE GROUP | DOOR DETAIL | Comments |
| G01 | 8' - 0" | 8' - 0" | OM | BLK | YES | 07 | 14/A10.11 | PAIR |
| G02 | 8' - 0" | 8' - 0" | OM | BLK | YES | 07 | 14/A10.11 | PAIR |
| G03 | 8' - 0" | 8' - 0" | OM | BLK | YES | 07 | 14/A10.11 | PAIR |
| G04 | 8' - 0" | 8' - 0" | OM | BLK | YES | 07 | 14/A10.11 | PAIR |
| G05 | 3' - 0" | 4' - 0" | CL | BLK | | 09 | 3/A10.11 | |
| G06 | 10' - 0" | 4' - 0" | CL | BLK | | 08 | 6/A10.11 | PAIR |
| G07 | 8' - 0" | 8' - 0" | OM | BLK | | | 14/A10.11 | PAIR |




## Parking Summary

PARKING LOT-A (FACULTY/ VISITOR)

| | |
|---|---|
| REGULAR STALLS: | 106 |
| ACCESSIBLE STALLS: | 5 |
| ACCESSIBLE VAN STALLS: | 1 |
| TOTAL: | 112 |
| ACCESSIBLE REQUIRED: | 5 |
| ACCESSIBLE VAN REQUIRED: | 1 |

## KEYNOTES

| NO. | NOTE | DETAIL |
|---|---|---|
| 02.08 | (E) PARKING STRIPING TO REMAIN | |
| 02.09 | (E) CHAINLINK FENCE AND GATES TO REMAIN | |
| 02.13 | (E) CHAINLINK FENCE TO REMAIN | |
| 02.48 | (E) CHAINLINK GATE TO REMAIN | |
| 05.46 | 4' HIGH CHAINLINK FENCE, SEE 1/A10.11 | |
| 05.48 | 8' HIGH ORNAMENTAL FENCE, SEE 13/A10.11 | |
| 05.49 | 8' WIDE ORNAMENTAL GATES | |
| 05.63 | (N) 4' HIGH CHAINLINK GATE | |
| 10.04 | KNOX BOX, SEE DETAIL 21/A10.11 | |
| 12.01 | FUTURE BENCH (NIC) | |
| 32.01 | CONCRETE PAVING, SEE CIVIL DWG | |
| 32.04 | TREE, SEE LANDSCAPE DWG | |
| 32.05 | LANDSCAPED AREA, SEE LANDSCAPE DWG | |
| 32.06 | PARKING STRIPING PAINTED BLUE | |
| 32.08 | CONCRETE WHEEL STOP - 6/ A10.12 | |
| 32.10 | TRUNCATED DOMES | |
| 32.18 | PAINT WHITE STRIPING, 3" WIDE, TYP. | |
| 32.29 | CONTROL JOINT, SEE CIVIL DRAWINGS | |
| 32.39 | TRENCH DRAIN, SEE CIVIL | |

## LEGEND

- LANDSCAPING, SEE LANDSCAPE DWGS
- COLORED CONCRETE, SEE FINISH SCHEDULE
- CONCRETE PAVING, SEE CIVIL DWGS
- ASPHALT PAVING, SEE CIVIL DWGS
- PROPOSED BUILDING
- CHAINLINK FENCE
- ORNAMENTAL FENCE

| | |
|---|---|
| OM | ORNAMENTAL METAL |
| CL | CHAINLINK |
| MTL | METAL |
| FF | FACTORY FINISH |
| BLK | BLACK |
| GLV | GALVANIZED |

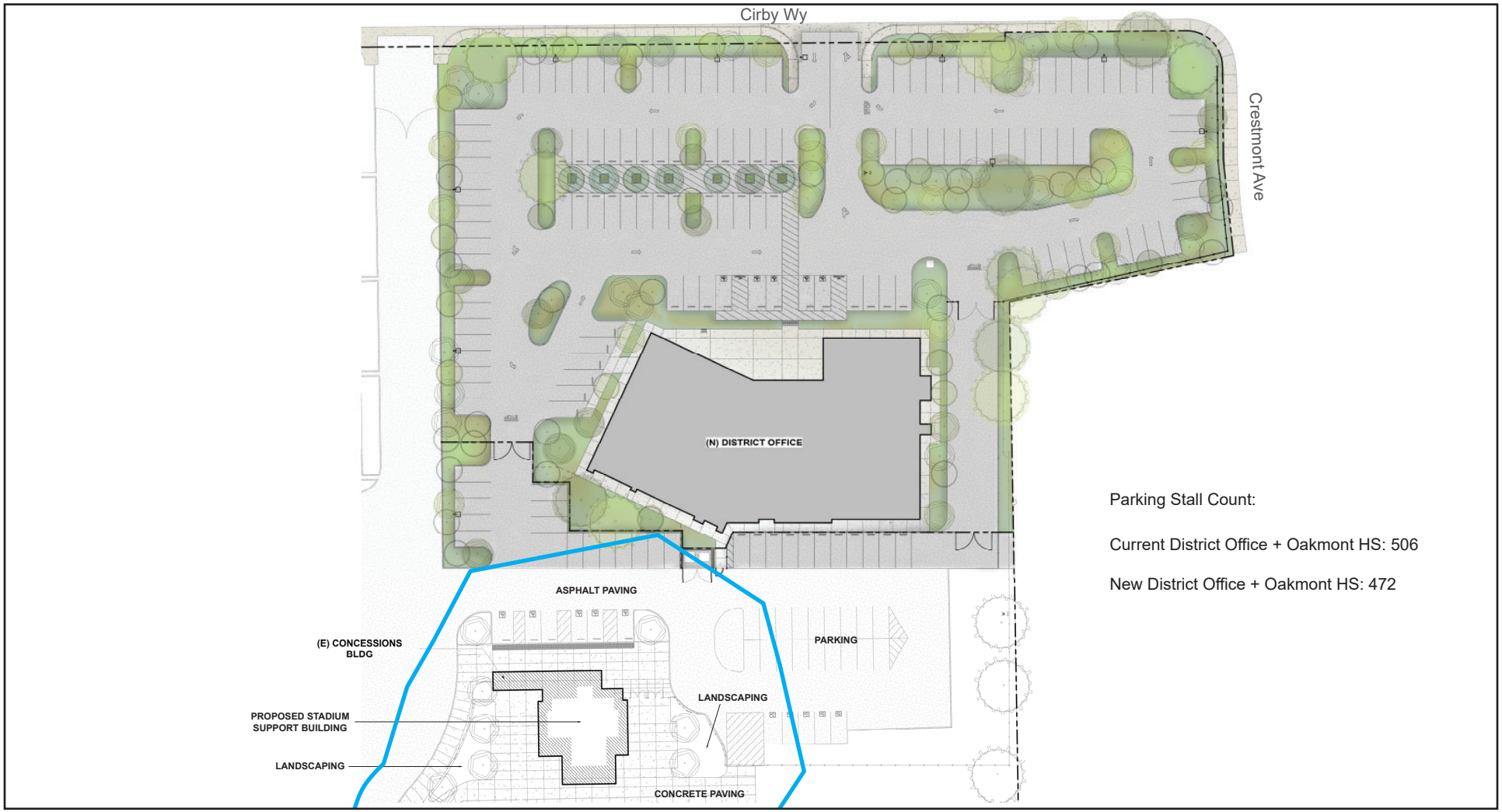
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Scale (Feet)

*Source: HMC Architects, 2021*

# 1. Introduction

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## Figure 5 - Overall Site Plan




Project Boundary

Note: In 2022, the Roseville Joint Union High School District approved a project to construct a new stadium support building containing space for ticketing, concessions, custodial, and restrooms at Oakmont High School. This project is planned to be completed by August 2023.

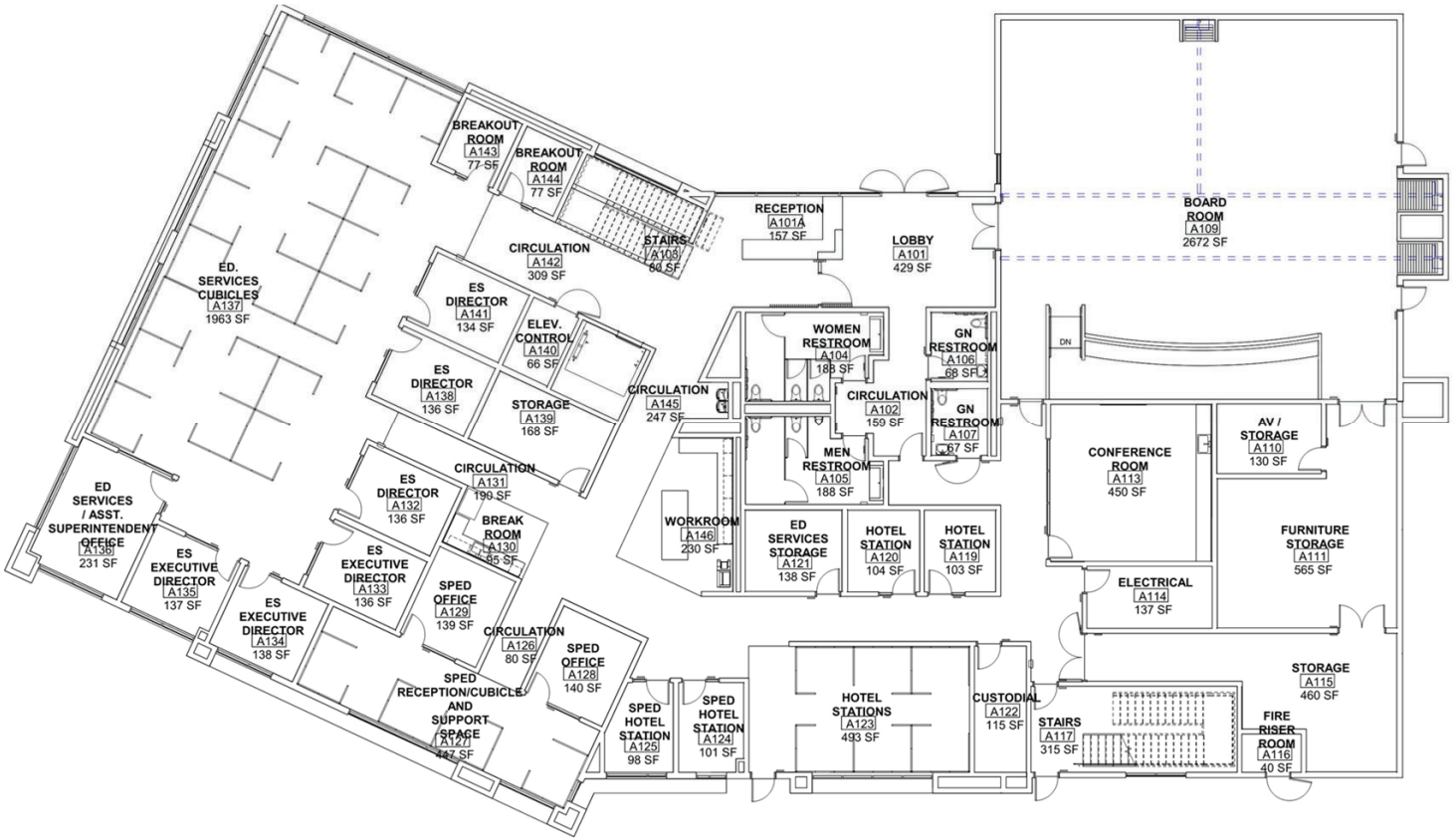
*Source: rga, 2022.*

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# 1. Introduction

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## Figure 6 - New Administration Building First Floor Layout

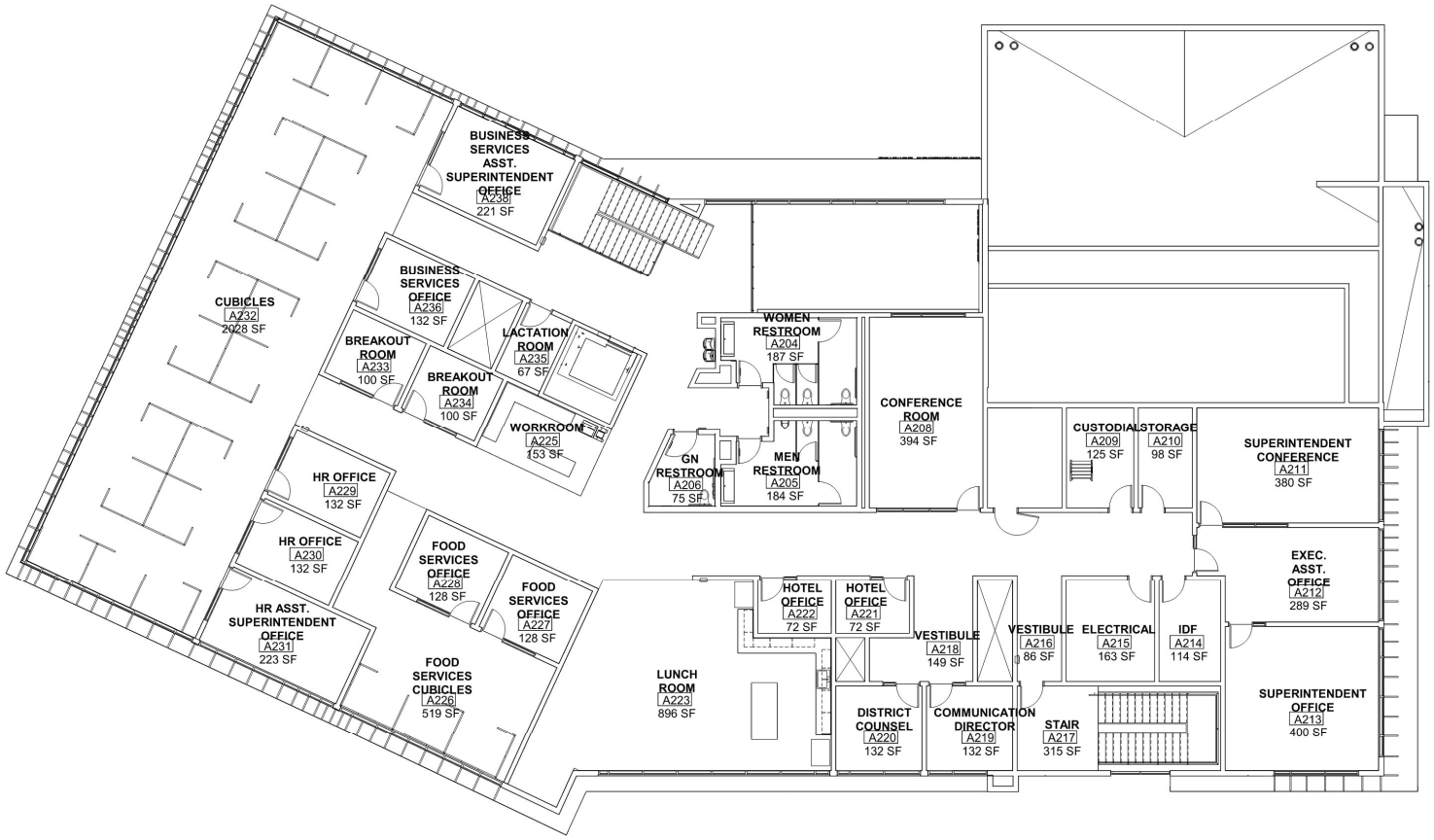



*Source: rga, 2022.*

# 1. Introduction

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## Figure 7 - New Administration Building Second Floor Layout




*Source: rga, 2022.*

# 1. Introduction

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## 1.3.3 Landscaping and Lighting

### 1.3.3.1 LANDSCAPING

As shown on Figure 5, *Overall Site Plan*, the project's landscape plan would feature new landscaping to the west, north, and east sides of the building and throughout the reconfigured parking lot. The proposed landscape scheme would include a variety of drought-tolerant ornamental trees, shrubs, and ground cover—approximately 40 new trees and 1,800 shrubs and ground cover. No native oak trees would be removed; however, approximately 22 ornamental trees would be removed as part of the proposed project.

### 1.3.3.2 LIGHTING

Light fixtures would be installed inside and around the exterior of the building. Currently, there are six light posts within the project site boundaries that provide lighting for the parking lot. All six light posts would be removed and replaced with twelve new light posts.

## 1.3.4 Access, Circulation, and Parking

### 1.3.4.1 VEHICULAR ACCESS AND CIRCULATION

As shown in Figure 5, *Overall Site Plan*, vehicular access for the project site would be provided via Cirby Way. Staff and visitors would continue to use the District office main entrance as well as the parking spaces along the front entrance of the property. The path of travel and access points would change from the existing conditions of the project site as a result of the parking lot configuration. This reconfiguration would occur to accommodate the design and layout of the proposed building and to allow for safe and efficient vehicular circulation. The parking spaces in the western portion of the project site and adjacent to the proposed building would change from diagonal parking spaces (as illustrated in Figure 3, *Aerial Photograph*) to perpendicular parking spaces (as illustrated in Figures 5, *Overall Site Plan*). Additional parking spaces would be provided in the northeastern portion of the project site on the currently empty grass lot.

### 1.3.4.2 PEDESTRIAN ACCESS AND CIRCULATION

Pedestrian access to the project site would continue to be provided via a public sidewalk along the northern and southern side of Cirby Way as well as along the western and eastern side of Crestmont Avenue; both streets are adjacent to the project site. There is one designated crosswalk near the school property that is east of the project site where Crestmont Avenue meets Cirby Way. There are no designated bike lanes near the school property.

### 1.3.4.3 STREET NETWORK, BIKE LANES, AND SIDEWALKS

The following paragraphs provide a brief description of the streets that provide access to the project site and the existing bicycle and pedestrian facilities.

# 1. Introduction

### Street Network, Bike Lanes, and Sidewalks

#### *Cirby Way*

Cirby Way is a four-lane, east-west street that extends from I-80 in the west to South Cirby Way in the east. Parking along this street is unavailable due to limited space between the street and sidewalk. Cirby Way has sidewalks along both sides of the street and there are no bike lanes. The speed limit on Cirby Way is 40 miles per hour.

#### *South Cirby Way*

South Cirby Way is a four-lane, east-west street that extends from Cirby Way in the west to Old Auburn Road in the east. Cirby Way has sidewalks along both sides of the street with designated bike lanes. The speed limit on South Cirby Way is 40 miles per hour.

#### *Old Auburn Road*

Old Auburn Road is a two-lane, east-west street that extends from Sunrise Boulevard in the west to Sierra College Boulevard in the east; Old Auburn Boulevard meets South Cirby Way at a "T" intersection with traffic signals. There are two painted white crosswalks at this intersection. Old Auburn Road has sidewalks along both sides of the street with designated bike lanes. Parking is also available along portions of this road. The speed limit on Old Auburn Road is 45 miles per hour east of the "T" intersection, and 40 miles per hour south of the "T" intersection.

### 1.3.4.4 PARKING

As shown on Figure 4, the main parking area for staff, personnel, and visitors would be in the existing parking lot near the front entrance and behind the District office near the Oakmont High School Stadium entrance and concessions building. Currently, 506 parking spaces include parking for both the District office and high school; two handicap parking spaces are behind the existing District office. The parking lot would be reconfigured to accommodate the new District office and improve vehicle circulation and pedestrian safety.

The proposed parking lot layout would improve circulation by adding new parking spaces in the northeastern portion of the project site, which is currently an empty grass lot. This area would accommodate 24 new parking spaces. In total, the proposed parking lot layout would have 472 parking spaces for the District office and high school, a reduction of 34 parking spaces. There would be 5 handicap parking spaces at the front entrance of the proposed District office. These 5 handicap parking spaces would provide safe and convenient access because they are situated near the proposed building and are easily accessible via a proposed ADA-compliant sidewalk ramp.

Other parking would continue to be provided outside of the project boundaries in the primary entrance of the high school to the west and south of the project site. Additional landscaping with curbs would be installed along the western perimeter of the project site to enclose the parking lot and establish a barrier from the primary high school entrance/exit.

### 1.3.5 Utilities

The following utilities would serve the new District office:

- **Water:** City of Roseville
- **Wastewater**: City of Roseville
- **Electricity:** Pacific Gas and Electric Company
- **Natural Gas:** Pacific Gas and Electric Company
- **Solid Waste Collection:** City of Roseville
- **Cable Television:** AT&T, DirecTV, Xfinity, Dish

### 1.3.6 Green Building Standards

Green building is the practice of designing, constructing and operating buildings to maximize occupant health and productivity, use fewer resources, reduce waste and negative environmental impacts, and decrease life-cycle costs (USGBC 2019). The project would be designed using green building practices, including those of the most current California Building Energy Efficiency Standards (Title 24, California Code of Regulations, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The Building Energy Efficiency Standards contain energy and water efficiency requirements (and indoor air quality requirements) for newly constructed buildings, additions to existing buildings, and alterations to existing buildings. CALGreen is California's statewide "green" building code. Its purpose is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.

As proposed, project develoment would include mandatory standards from Divisions 5.1, Planning and Design; 5.2, Energy Efficiency; 5.3, Water Efficiency and Conservation; 5.4, Material Conservation and Resource Efficiency; and 5.5, Environmental Quality, of CAlGreen. Some of the specific green building standards address:

- Bicycle parking
- Light pollution reduction
- Water-conserving plumbing fixtures and fittings
- Construction waste reduction, disposal, and recycling
- Recycling by occupants
- Finish material pollutant control

## 1.3.7 Administration Operations and Staffing

### 1.3.7.1 OPERATIONAL HOURS AND CALENDAR

Based on the proposed construction timeline (see Section 1.3.8, *Project Phasing and Construction*), it is anticipated that the newly constructed building would be operational in September 2024. However, the existing District office will remain operational during construction. District office hours of operation would continue to be from 7:30 am to 4:00 pm, Monday through Friday during normal school months, which is the second week of August through the first week of June (just over 10 months). Normal hours of operation are subject to change when school is not in session.

### 1.3.7.2 STAFFING

The project involves the construction of a new two-story District office on the existing District property. The new District office would allow the District to consolidate its administrative functions into one central facility and would result in a net increase of 19,150 square feet of building space. Currently, the District staff population on-site is approximately 24 persons. The project would also relocate 28 staff from various other District facilities to the new District office. Staff from other facilities provide special education and educational services. The proposed project would not increase staff in the District because staff would relocate from other locations to the new District office.

## 1.3.8 Project Phasing and Construction

Project development is anticipated to be completed in one phase, including demolition of the existing District office, site preparation, grading and excavation, trenching for site utilities, construction of the new District office, paving, and painting. Overall construction is estimated to take approximately 18 months, from June 2023 to November 2024. The existing District office will remain operational during construction of the new District office. The newly constructed District office would be fully constructed and operational in September 2024. At this stage, staff will move into the new District office and the existing District office will be demolished. From September to November 2024, the parking lot will be constructed.

The project would require approximately 2,000 cubic yards (cy) of cut and approximately 1,800 cy of fill. This could result in approximately 200 cy of soil exported; no soil would be imported. The types and numbers of construction equipment expected to be used during construction activities are summarized in Section 3.3, *Air Quality*. Based on the proposed construction timeline, it is anticipated that the new District office would be operational in September 2024 and the project would be fully complete in November 2024.

## 1.3.9 Discretionary Actions and Approvals

A discretionary action is an action taken by a government agency that calls for an exercise of judgment in deciding whether to approve a project. The Roseville Joint Union High School District is the lead agency under CEQA and has the principal approval authority over the project. The MND must be adopted by the Board of Education, confirming its adequacy in complying with the requirements of CEQA. The Board will consider the information in the MND when deciding to approve or deny the proposed project. The analysis is intended

to provide environmental review for the whole of the proposed project, including the planning of the project; clearance, excavation, and grading of the site; construction of the building; installation of the proposed facilities; and ongoing operation.

### 1.3.10 Non-discretionary/Ministerial Actions and Approvals

A public agency other than the lead agency that has discretionary approval power over a part of the proposed project is known as a "responsible agency," in the CEQA Guidelines. The responsible agencies and their corresponding approvals for this project may include:

- California Department of Education, School Facilities and Transportation Services Division
- California Department of General Services, Division of the State Architect
  - Approval of site plans and building plans
  - Approval of a Site Plan Review
- City of Roseville
  - Approval of roadway and stormwater connection improvements.
  - Approval of any roadway closures needed to implement the improvements.

## 1.4 EXISTING ZONING AND GENERAL PLAN

The prevailing adopted planning and regulatory documents that govern development and use of the project site are the City of Roseville General Plan and Zoning Ordinance (Title 19 of the City of Roseville Municipal Code). The City of Roseville General Plan land use designation of the project site is Public Quasi-Public (P/QP) and Medium-Density Residential (MDR). The project site is zoned Public Quasi-Public (P/QP) and Two-Family Residential (R-2).[1,2] The development and design standards and regulations in the City of Roseville Zoning Ordinance, which implements the City of Roseville General Plan, constitute the zoning regulations that govern development of the project site. As proposed, the new District office is permitted under the P/QP and MDR land use designations and P/QP and R-2 zoning districts.

[1] The public/quasi-public district is applied to land intended for education, religious assembly, governmental offices, municipal corporation yards, water treatment plants, power generating facilities (including privately owned facilities), and other publicly-owned facilities.

[2] The two-family residential district is intended to allow two dwellings per lot, either detached single-family dwellings or duplexes, and similar and related compatible uses

# 1. Introduction

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# 2. Environmental Checklist

## 2.1 PROJECT INFORMATION

1. **Project Title:** New District Office Project

2. **Lead Agency Name and Address:**
   Roseville Joint Union High School District
   2 Tiger Way, Building #2
   Roseville, California 95678

3. **Contact Person and Phone Number:**
   Scott Davis, Director of Facilities Development
   916.782.4707

4. **Project Location:**
   The project site encompasses APNs: 469-340-010-000 and 469-280-049-000, at 1750 Cirby Way, Roseville, California.

5. **Project Sponsor's Name and Address:**
   Roseville Joint Union High School District
   2 Tiger Way, Building #2
   Roseville, California 95678

6. **General Plan Designation:**
   Public Quasi-Public (P/QP) and Medium-Density Residential (MDR).

7. **Zoning:**
   Public Quasi-Public (P/QP) and Two-Family Residential (R-2).

8. **Description of Project:**
   The proposed project involves the construction of a new two-story, 26,526-square-foot District office and demolition of an existing, 7,376-square-foot District office. The new District office would allow the District to consolidate its administrative functions into one central facility and would result in a net increase of 19,150 square feet of building space. Currently, the District staff population on-site is approximately 24 persons. The project would also relocate 28 staff from various other District facilities to the new District office. The proposed project would not result in an increase in staff in the District.

   The newly constructed District office would provide a board room, restrooms, breakout rooms, conference rooms, offices, space for cubicles, and storage rooms. The footprint of the new District office would increase by 19,150 square feet. The location of the new building would be immediately south of the existing District office. The District office would be designed and constructed as a 37-foot-tall, two-story

administration that would serve as District headquarters. Primary entrance to the administrative building would be from the northern side of the building, which faces the parking lot and property entrance/exit.

The project's landscape plan would feature new landscaping to the west, north, and east sides of the building and throughout the reconfigured parking lot. The proposed landscape scheme would include a variety of drought-tolerant ornamental trees, shrubs, and ground cover—approximately 40 new trees and 1,800 shrubs and ground cover. No native oak trees would be removed; however, approximately 22 ornamental trees would be removed as part of the proposed project.

Vehicular access for the project site would be provided via Cirby Way. Staff and visitors would continue to use the District office main entrance as well as the parking spaces along the front entrance of the property. The path of travel and access points would change from the existing conditions of the project site as a result of the parking lot configuration. This reconfiguration would occur to accommodate the design and layout of the proposed building and to allow for safe and efficient vehicular circulation. The parking spaces in the western portion of the project site and adjacent to the proposed building would change from diagonal parking spaces to perpendicular parking spaces. Additional parking spaces would be provided in the northeastern portion of the project site on the currently empty grass lot.

Pedestrian access to the project site would continue to be provided via a public sidewalk along the northern and southern side of Cirby Way as well as along the western and eastern side of Crestmont Avenue; both streets are adjacent to the project site.

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

The District headquarters is immediately east and north of Oakmont High School. To the north and east are single-family residences.

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

California Department of General Services, Division of the State Architect

- Structural
- Fire Life Safety
- American with Disabilities Act (ADA)
- Model Water Efficient Landscape Ordinance
- California Department of Education Plan Approval

City of Roseville

- Approval of any roadway closures needed to implement the improvements.

**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.

The following list of tribes are on the District's notification list pursuant to Assembly Bill (AB) 52:

- Shingle Springs Band of Miwok Indians
- Tsi Akim Maidu
- United Auburn Indian Community of the Auburn Rancheria
- Wilton Rancheria
- Colfax-Todds Valley Consolidated Tribe
- Nevada City Rancheria Nisenan Tribe

As of the time of the publication of this Mitigated Negative Declaration, the United Auburn Indian Community of the Auburn Rancheria is the only tribe to contact the District; no tribes requested consultation. The United Auburn Indian Community of the Auburn Rancheria provided a recommended tribal cultural resources mitigation measure which is incorporated into this IS/MND.

2. Environmental Checklist

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

## 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* |

## 2.4 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.

# 2. Environmental Checklist

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 |
| 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 |

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **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 | |

| 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? | | | | |
| 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 |

# 2. Environmental Checklist

| 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 |

| 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 | |

# 2. Environmental Checklist

| | Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| 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 | |
| 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 | |

# 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.** For purposes of determining significance under CEQA, a scenic vista is generally considered a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Some scenic vistas are officially designated by public agencies or informally designated by tourist guides. Vistas provide visual access or panoramic views to a large geographic area and are generally at a point where surrounding views are greater than one mile away. Panoramic views are usually associated with vantage points over a section of urban or natural areas that provide a geographic orientation not commonly available. Examples of panoramic views might include an urban skyline, valley, mountain range, large open space area, the ocean, or other water bodies. A substantial adverse effect to a scenic vista is one that degrades the view from such a designated view spot.

There are no designated scenic vistas in the City of Roseville. Views from the project site consist of developed urban land. There are no prominent landscape features on the site itself, and the proposed project would not impact a viewshed of a surrounding scenic vista. Views of the project site are limited to private residential properties to the north and east, a public view from Cirby Way to the north, and from the existing high school to the west and south. Therefore, impacts to scenic vistas would be less than significant and no mitigation measures are necessary.

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

**No Impact.** A scenic highway is generally considered a stretch of public roadway that is designated a scenic corridor by a federal, state, or local agency. The California Department of Transportation (Caltrans) defines a scenic highway as any freeway, highway, road, or other public right-of-way that traverses an area of exceptional scenic quality.

There is no designated or eligible state scenic highway on or in close proximity to the project site, and the project site is not visible from any officially designated or eligible state or locally designated scenic highway. The City of Roseville does not have any locally designated scenic highways.

# 3. Environmental Analysis

According to the California Scenic Highway Mapping System, the nearest eligible scenic highway is State Route 174, about 32 miles to the northeast near the City of Colfax and at the foothills of the Sierra Nevada (Caltrans 2022). The nearest officially designated scenic highway (State Route 160) is south of Sacramento, about 23 miles to the southwest of the site. The proposed project would have no impact on scenic resources in a state scenic highway. Furthermore, there are no rock outcroppings or historic buildings on-site—the project site consists of a parking lot and District office. Therefore, no impact to scenic resources within a state scenic highway would occur due to project development, and no mitigation measures are necessary.

**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.** Public Resources Code (PRC) 21071 defines the term "urbanized area" for the purpose of CEQA to mean an incorporated city that has a population of at least 100,000 persons or has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons. According to the US Department of Commerce, Bureau of the Census data from 2021, the City of Roseville has a population of 151,901 (US Census Bureau 2021). Thus, the project site is within an urbanized area as defined by PRC 21071 and is therefore evaluated relative to applicable zoning and other regulations governing scenic quality.

The project site is zoned P/QP and applied to land intended for educational purposes. The proposed project would be consistent with applicable development regulations of the underlying P/QP zones pertaining to visual character, such as height limitations and setbacks. Therefore, the proposed project would not conflict with applicable zoning or other regulations governing scenic quality. 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.** The two major causes of light pollution are glare and spill light. Spill light is caused by misdirected light that illuminates areas outside the area intended to be lit. Glare occurs when a bright object appears against a dark background, such as oncoming vehicle headlights or an unshielded light bulb.

As shown in Figure 3, *Aerial Photograph*, the project site (which consists of an existing District office and a parking lot) is surrounded by residential uses. Residential uses are considered light-sensitive receptors, that is, land uses that are sensitive to lighting.

The project vicinity has streetlights, vehicle lights, parking lot lights, and building and security lights from the existing school property. The new District office on the site would have light fixtures installed inside and around the exterior of the building. The project would not include any high-intensity lighting such as those used for athletic fields or nighttime sports activity. Security and path lights would be directional and would not spill light to nearby residential properties. All lights would also be shielded to avoid light spill and glare onto adjacent properties. Lighting would not be substantially greater intensities than existing lights near the project site, and

nighttime views would not be significantly affected. Therefore, light and glare impacts would be less than significant, and no mitigation measures are necessary.

## 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 project site is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the California Important Farmland Finder (DLRP 2016). The proposed project would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and no impact would occur.

**b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?**

**No Impact.** The project site is zoned P/QP and is not zoned for agricultural use (City of Roseville 2022a). There are no lands contracted under the Williamson Act for agricultural use on-site or within the immediate vicinity of the site (CDC 2006). 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 project site is developed and is zoned P/QP. Project implementation would not cause rezoning of forestland or timberland. Therefore, 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 does not contain forestland, nor is the project site zoned as forestland. The project site is developed, and implementation of the proposed project would not convert forestland to nonforest use or result in a loss of forestland. 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.** As shown in Figure 3, *Aerial Photograph*, the project site is not adjacent to agricultural uses. Improvements proposed with the project would result in the construction of a new two-story District office on the existing District property. The P/QP Zone District is not considered an agricultural zone. There is no potential to convert farmland to nonfarm uses, and no impact would occur.

## 3.3 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?**

**Less Than Significant Impact.** The Placer County Air Pollution Control District (PCAPCD), in coordination with other local air districts in Sacramento area prepared and submitted the 1991 Air Quality Attainment Plan to demonstrate how Placer County would attain the required federal 8-hour ozone standard by 2024 (CARB 2018). In accordance with the Clean Air Act, PCAPCD and other air districts in the region also prepared the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Sacramento Ozone Plan) in July 2017, which stands as the applicable air quality plan for the region, as a revision to the California State Implementation Plan (SIP). The Sacramento Ozone Plan demonstrated that the Sacramento area would attain in 2024 and included an emission inventory, reasonable further progress (RFP) demonstration with a baseline year of 2012, transportation conformity budgets for the years 2020 and 2023, and RFP and attainment contingency provisions.

The SIP plans and control measures are based on information derived from regional growth projections based on general plans developed by Placer County to forecast future emission levels in the Sacramento Valley Air Basin (SVAB). Therefore, projects that propose development consistent with the growth anticipated or development that is less dense than is associated with the Roseville General Plan would be consistent with the SIP. Changes in population, housing, or employment growth projections have the potential to affect PCAPD's demographic projections and therefore the assumptions in SIP. Typically, only large, regionally significant projects have the potential to affect the regional growth projections.

The project site is currently P/QP and R-2. The land use development on the project site would be consistent with the City of Roseville Zoning Ordinance. The replacement of a new District office building would not result in a substantial deviation from the existing plans since the project would maintain office use on-site.

Additionally, based on the scope and nature of the proposed project, it is anticipated to generate fewer than 1,000 jobs and would develop less than 500,000 square feet of business floor space. Thus, it would not meet the criteria for a project of statewide, regional, or areawide significance established under CEQA Guidelines Section 15206(b)(2). As demonstrated below, the regional emissions that would be generated by the operational phase of the proposed project would be less than the PCAPCD's significance thresholds. Therefore, it would

not be considered by PCAPCD to be a substantial source of air pollutant emissions that would have the potential to affect the nonattainment designations in the SVAB. The proposed project would not affect the regional emissions inventory or conflict with strategies in the SIP, and 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 produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions ($PM_{10}$ and $PM_{2.5}$) from demolition and soil-disturbing activities such as grading and excavation. Air pollutant emissions from construction activities on-site would vary daily as construction activity levels change. Construction activities associated with the proposed project would result in emissions of reactive organic gases (ROG), nitrogen oxides ($NO_X$), and coarse particulate matter ($PM_{10}$).

The proposed project would result in demolition debris and would require minimal soil export from the rough grading activities. A quantified analysis of the proposed project's construction emissions was conducted using the California Emissions Estimator Model (CalEEMod), version 2022.1, based on information provided by the project applicant and equipment mix for each construction activity. The approximately 18-month construction period is assumed to begin in June 2023 and end in November 2024.

Potential construction-related air quality impacts are determined by comparing the average daily criteria air pollutants emissions generated by the project-related construction activities to the PCAPCD significance thresholds in Table 1, *Average Daily Construction-Related Criteria Air Pollutant Emissions*. Average daily emissions are based on the annual construction emissions divided by the total number of active construction days. As shown in Table 1, criteria air pollutant emissions from construction equipment exhaust would not exceed the PCAPCD significance thresholds, and impacts from project-related construction activities to the regional air quality would be less than significant.

# 3. Environmental Analysis

**Table 1 Average Daily Construction-Related Criteria Air Pollutant Emissions**

| | Average Daily Emissions (lbs/day)[1,2] | | |
|---|---|---|---|
| | **ROG** | **$NO_X$** | **$PM_{10}$** |
| Average Daily Emissions[3] | 0.47 | 3.42 | 0.18 |
| **PCAPCD Construction Thresholds** | **82** | **82** | **82** |
| **Exceeds Average Daily Threshold?** | No | No | No |

Source: Appendix A, CalEEMod Version 2022.1. Highest winter or summer emissions are reported.
Notes: Reactive Organic Gases = ROG; Coarse Inhalable Particulate Matter = $PM_{10}$
1. Construction phasing and equipment mix are based on the preliminary information provided by the project applicant. 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 Air Quality Management District of construction equipment and phasing for comparable projects.
2. Includes implementation of BMPs for fugitive dust control required by PCAPCD as mitigation, 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.
3. Average daily emissions are based on the total construction emissions divided by the total number of active construction days. The total number of construction days is estimated to be about 423.

## Regional Long-Term Operational Impacts

Operational emissions were estimated using CalEEMod and are based on the information provided by the client. Operational activities associated with the proposed project would result in the generation of criteria air pollutant emissions from mobile sources, area sources (e.g., landscaping equipment, architectural coating), and energy use (i.e., natural gas used for heating and cooking). In addition, existing operations on-site generate criteria pollutant emissions from mobile sources, area sources, and energy sources principally associated with the operation of the existing district office and vehicle trips generated by the 24 current on-site employees. These existing on-site emissions would be foregone with the implementation of the proposed project, and PCAPCD recommends that existing emissions be subtracted from proposed project emissions before being compared against PCAPCD significance thresholds.

Section 3.17, *Transportation*, finds that the proposed project would accommodate an anticipated total 52 employees and 28 new employees upon full buildout. For this analysis, 2.5 average daily trips (ADT) per employee was assumed to account for employees traveling to and from the project site daily and any additional incidental trips. The existing operations with 24 employees currently generate up to 60 ADT, and the proposed project is anticipated to generate a total 130 ADT, resulting in a net increase of up to 70 ADT. It should be noted that this analysis represents a conservative assessment of project emissions during operation because it does not consider the foregone emissions generated from existing operations on-site. Criteria pollutant emissions from full operation of the proposed project, without subtracting existing emissions, are shown herein for a conservative assessment of the proposed project and are compared against PCAPCD significance thresholds.

As shown in Table 2, *Average Daily Regional Operation Emissions*, the maximum daily operation emissions would be less than their respective PCAPCD significance threshold values. Therefore, the operation of the proposed project would not contribute to the nonattainment designations of the SVAB, and regional air quality impacts are less than significant.

**Table 2 Average Daily Regional Operation Emissions**

| | Average Daily Emissions (lbs/day) | | |
|---|---|---|---|
| | **ROG** | **$NO_X$** | **$PM_{10}$** |
| Average Daily Emissions | 1.07 | 0.43 | 0.02 |
| **PCAPCD Operational Project-Level Thresholds** | **55** | **55** | **82** |
| **Exceeds Average Daily Threshold?** | No | No | No |

Source: Appendix A, CalEEMod Version 2022.1. Highest winter or summer emissions are reported.
Note: lbs: pounds.

**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 Impacts

Future construction under the proposed project would temporarily elevate concentrations of toxic air contaminants (TAC) and diesel particulate matter in the vicinity of sensitive land uses during construction activities. The nearest sensitive receptor to the project site is the single-family residence approximately 50 feet to the east. However, construction emissions associated with the proposed project would stay localized in the proposed project's vicinity and be temporary in nature. Moreover, the proposed project would involve the demolition of a 7,376-square-foot building and construction of a 26,526-square foot building in its place. Because construction of the proposed project would be temporary and involve a relatively small amount of demolition and construction, it is anticipated that the construction-related health risk impacts associated with the proposed project would not exceed acceptable PCAPCD's significance levels, and impacts would be less than significant.

## Operation Health Risk

People exposed to TACs at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. To reduce exposure to TACs, CARB developed a handbook for 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 (CARB 2005). This document was developed as a guide for assessing the compatibility and associated health risk when placing sensitive receptors near existing pollution sources.

Types of land uses that typically generate substantial quantities of criteria air pollutants and TACs include industrial (stationary sources), manufacturing, and warehousing (truck idling) land uses that could generate a substantial number of trucks. CARB recommends avoiding siting new sensitive land uses within "1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transportation refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week)"

to avoid exposing sensitive receptors to substantial concentration of air pollutants (CARB 2005). PCAPCD additionally recommends that a site-specific health risk analysis involving air dispersion modeling be considered for projects that are anticipated to generate TACs, such as goods distribution centers, refineries, power generation facilities, chrome platers, dry cleaners, and gasoline-dispensing facilities.

The types of major air pollutant emissions sources listed by CARB and PCAPCD are not included as part of the proposed project. The proposed project would not include stationary sources that emit TACs and would not generate a significant amount of daily heavy-duty truck trips (a source of diesel particulate matter) to warrant a more detailed review. Therefore, the proposed project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during operation, and impacts would be less than significant.

### CO Hotspots

Areas of vehicle congestion have the potential to create pockets of carbon monoxide (CO) called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 parts per million (ppm) or the 8-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 the California and National Ambient Air Quality Standards (AAQS) is typically demonstrated through an analysis of localized CO concentrations, typically produced at intersections where vehicles queue for longer periods and are subject to reduced speeds. Currently, the SVAB is designated attainment for CO under both the California and National AAQS. According to the PCAPCD, CO concentrations should be analyzed at intersections in the project vicinity if the project's CO emissions from vehicle operation are more than 550 lbs/day *and* if the level of service (LOS) would be degraded from acceptable (i.e., A, B, C, or D) to unacceptable (i.e., E or F); or a project would result in the addition of traffic that would substantially worsen (delay of 10 seconds or more with project-generated traffic included) already unacceptable peak-hour LOS intersections.

As shown in Table 2, the average daily operational emissions would be lower than PCAPCD's operational thresholds, and the average daily mobile-operational emissions would be 3.15 lbs/day, which is far less than the 550 lbs/day criteria. Furthermore, the proposed project would not result in an increase in staff within the District but would relocate staff from other locations to the new proposed District office. Therefore, the operational-mobile emissions associated with the 52 employees is a conservative estimate because the land use type would remain the same and it is speculative that existing operations emissions would be redistributed to the new project site. Therefore, operation of the proposed project would not generate CO emissions in high enough quantities to result in a CO hotspot at nearby intersections. This impact 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 PCAPCD Rule 205, *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 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. Proposed project operations would involve the development of a new office building and would not create objectionable odors to the public. Additionally, 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 are not expected to affect a substantial number of people. Therefore, overall, 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?**

**Less Than Significant Impact With Mitigation Incorporated.** Candidate species are plants and animals that have been studied and the US Fish and Wildlife Service (USFWS) has concluded that they should be proposed for addition to the federal endangered and threatened species list.

Sensitive biological resources are habitats[3] or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, or rare. The California Department of Fish and Wildlife (CDFW), USFWS, and organizations like the California Native Plant Society maintain watch lists of such resources.

"Special status species" is a universal term in the scientific community for species that are considered sufficiently rare that they require special consideration and/or protection and should be or have been listed as rare, threatened, or endangered by USFWS and/or CDFW.

### Candidate and Sensitive Species

No candidate or sensitive species occur on-site. Therefore, no impact would occur and no mitigation measures are necessary.

[3] Per the California Department of Fish and Wildlife, habitat is where a given plant or animal species meets its requirements for food, cover, and water in both space and time.

# 3. Environmental Analysis

## Special Status Species

There are no special-status species previously documented within the project site boundaries.

### *Special Status Plants*

The project site is previously disturbed and developed as a parking lot with a District office. No special-status plant species occur within the project area due to historical and continued disturbance and use and the presence of a large parking lot entrance and maintained landscaping. While tree or vegetation removal may be required for the project, the project would not result in direct impacts on special-status plants during construction given their absence within the project site boundaries. Therefore, impacts would be less than significant.

### *Special Status Wildlife*

Based on database search results and wildlife surveys in the project area, the following special-status species are known to occur in or adjacent to the project site: California tiger salamander, delta smelt, monarch butterfly, valley elderberry longhorn beetle, vernal pool fairy shrimp, and vernal pool tadpole shrimp (USFWS 2022). However, these species are not discussed further because they and/or suitable habitats are absent from the project site.

The project site is previously disturbed and developed as a parking lot with a District office. No special-status wildlife species occur within the project area due to historical and continued disturbance and use and the presence of a large parking lot entrance and maintained landscaping. However, native migratory birds may be present in the project area. All locations with a shrub- or tree-canopy layer in the project area may provide suitable nesting habitat for a diverse assemblage of migratory birds.

The eastern perimeter of the site consists of 13 mature native oak trees, and 28 ornamental trees are scattered throughout the site. A majority of the site is developed with pavement and sidewalks and includes the existing District office. The northeastern portion of the project site consists of an undeveloped, empty grass lot. Tree or vegetation removal will be required for the project; therefore, the project could result in direct impacts on special-status birds if they are nesting in the affected trees and vegetation during construction. Indirect impacts on special-status birds could result from noise and vibration during construction if birds were nesting in the trees adjacent to the project area. Therefore, per Mitigation Measure BIO-1, a preconstruction nesting bird survey is required within 14 days of the beginning of ground disturbance during the nesting season. Additionally, per Mitigation Measure BIO-2, a no-disturbance buffer around the nest shall be established if active nests are found. Impacts would be less than significant with implementation of mitigation.

## Mitigation Measures

BIO-1 Conduct a pre-construction nesting raptor and bird survey of all suitable habitat on the project site within 14 days of the commencement of ground disturbance (e.g., tree/vegetation removal, mass grading) during the nesting season (February 1 to August 31). Where accessible, surveys should be conducted within 300 feet of the project site for nesting raptors and 100 feet of the project site for other nesting birds.

BIO-2 If active nests are found, a no-disturbance buffer around the nest shall be established. The buffer distance shall be established by a qualified biologist in consultation with CDFW. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest tree, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary.

**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?**

**No Impact.** Sensitive natural communities are communities that are considered rare in the region by regulatory agencies; known to provide habitat for sensitive animal or plant species; or known to be important wildlife corridors. Riparian habitats are those occurring along the banks of rivers and streams.

No riparian habitat or other sensitive natural communities are within the project site. No impact would occur, and no mitigation measures are necessary.

**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.** Wetlands are defined under the federal Clean Water Act as land that is flooded or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include areas such as streams, swamps, marshes, and bogs.

No wetlands potentially jurisdictional to the US Army Corps of Engineers pursuant to the Clean Water Act are within the project site. No impact would occur, and no mitigation measures are necessary.

**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 With Mitigation Incorporated.** Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Movement corridors may provide favorable locations for wildlife to travel between different habitat areas, such as foraging sites, breeding sites, cover areas, and preferred summer and winter range locations. They may also function as dispersal corridors, allowing animals to move between various locations within their range.

The Migratory Bird Treaty Act (50 Code of Federal Regulations Part 10 and Part 21) protects migratory birds, their occupied nests, and their eggs from disturbance or destruction. "Migratory birds" include all nongame, wild birds found in the U.S., except for the house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), and rock pigeon (*Columba livia*).

There are no significant habitat features (e.g., wetlands or riparian areas) within or adjacent to the project site, and project development is not expected to impact wildlife movement. However, trees and low shrubs on-site could provide suitable nesting habitat for birds protected under the Migratory Bird Treaty Act.

The undeveloped portions of the project site are made up of low-lying shrubs, grass, and a mix of ornamental and native oak trees. Tree or vegetation removal would be required for the project; therefore, the project could result in direct impacts on migratory birds if they are nesting in the affected trees and vegetation during construction. Indirect impacts on migratory birds could result from noise and vibration during construction if birds were nesting in the trees adjacent to the project area. Therefore, per Mitigation Measure BIO-1, a pre-construction nesting bird survey is required within 14 days of the commencement of ground disturbance during the nesting season. Additionally, per Mitigation Measure BIO-2, a no-disturbance buffer around the nest shall be established if active nests are found. Therefore, impacts would be less than significant with implementation of mitigation.

### Mitigation Measures

Implement Mitigation Measures BIO-1 and BIO-2.

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

**No Impact.** The City of Roseville does not have any established ordinances protecting biological resources. Therefore, no impact would occur, and no mitigation measures are necessary.

**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.** There are no adopted habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans that govern the project site (CDFW 2019). Placer County prepared and adopted the Placer County Conservation Plan (PCCP) in 2020 that covers most of South Placer. However, it excludes the cities of Roseville, Rocklin, Loomis, and Auburn. The City of Roseville is not a current participant in the PCCP. 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?**

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

As shown on Figure 3, *Aerial Photograph*, the project site has been developed as school property with a parking lot. Project development would involve construction of a new two-story, 26,526-square-foot District office and demolition of an existing, 7,376-square-foot District office. The site does not contain any buildings that would be considered historic. Furthermore, the project site does not meet any of the state or federal criteria of a historic resource identified above. No historical events have occurred on-site, and no persons of significance have resided or currently reside on-site. Additionally, the site does not exhibit any unique architectural style or features, nor does it have architectural elements or features to suggest unique design or construction.

Furthermore, the project site is not identified on any federal or state historic registers or sources, including the National Register of Historic Places and California State Historical Landmarks and Points of Historical Interest (NPS 2020; OHP 2020). The closest California Historical Resources to the project site is the Strap Ravine Nisenan Maidu Indian Site, approximately one mile to the northeast. Project development would occur within the confines of the project site and would not impact this historical resource in any way. Therefore, no impact would occur and no mitigation measures are necessary.

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

**Less Than Significant Impact With Mitigation Incorporated.** Archaeological resources are prehistoric or historic evidence of past human activities, including structural ruins and buried resources. As shown in Figure 3, *Aerial Photograph*, the project site has been developed as school property with a parking lot. The surrounding lands include residential properties to the north and east, and Oakmont High School to the west and south.

Given the highly disturbed condition of the project site and its surroundings as well as the minimal grading required for project construction, the potential for development of the proposed project to impact an unidentified archaeological resource is considered extremely low. However, in the unlikely event that prehistoric and/or historic archaeological resources are discovered during ground-disturbing activities, Mitigation Measure CUL-1 has been identified to ensure impacts to archaeological resources would be less than significant.

## Mitigation Measures

CUL-1 Prior to ground disturbance by project site clearance and grading, the District shall retain a qualified professional archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology to be on call during all project ground-disturbance activities.

If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. The professional archaeologist shall evaluate the significance of the find and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the CEQA lead agency and applicable landowner. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures if the find is determined to be eligible for inclusion in the NRHP or CRHR. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not eligible for the NRHP or CRHR; or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains or remains that are potentially human, the professional archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Placer County Coroner. The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the NAHC, who will designate a Native American most likely descendant (MLD) for the project (Section 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the District does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the PRC). If no agreement is reached, the District must rebury the remains where they will not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate information center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

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

**Less Than Significant Impact.** California Health and Safety Code, Section 7050.5; CEQA Guidelines, Section 15064.5; and California Public Resources Code, Section 5097.98 mandate the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Specifically, California Health and Safety Code, Section 7050.5, requires that if human remains are discovered

on a project site, disturbance of the site shall remain halted until the coroner has conducted an investigation into the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. If the coroner determines that the remains are not subject to his or her authority and if the coroner has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

There are no cemeteries or known human burials at the project site because the site is already developed as school property, and the subject property has been previously disturbed; however, ground disturbance (i.e., grading and excavation) would have the potential to result in discovery of human remains (although the potential is very low). In the unlikely event that human remains are discovered during ground-disturbing activities, compliance with existing law regarding the discovery of human remains would reduce potential impacts to human remains to less than significant levels. No mitigation measures are necessary.

# 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.** Construction activities use energy from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew and vendors. The operation of the proposed District office building would use energy for cooling, heating, lighting, landscape equipment, and for vehicle trips to and from the proposed building. As previously discussed, the proposed project would result in an increase of 28 staff, which would generate up to 70 net new vehicle trips per day beyond existing conditions on-site.

## Short-Term Construction Impacts

### *Electrical Energy*

Construction of the proposed project would require energy use to power the construction equipment. The energy use would vary during different phases of construction—the majority of construction equipment during demolition and grading would be gas powered or diesel powered, and the later construction phases would require electric-powered equipment for interior construction and architectural coatings. However, 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. The electrical energy would be supplied by Roseville Electric and available for use during construction from existing power lines and connections, precluding the use of less efficient generators. All construction equipment would cease operating upon completion of project construction.

# 3. Environmental Analysis

### *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.

### *Transportation Energy*

Transportation energy (i.e., diesel fuel, gasoline, and or electric) used during construction would come from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction employee vehicles that would use diesel fuel and/or gasoline. It is anticipated that the majority of off-road construction equipment, such as those used during site preparation and grading, would be gas or diesel powered.

Construction activities would be subject to applicable State regulations such as anti-idling measures and limits on duration of activities, thereby reducing energy consumption. For example, to limit wasteful and unnecessary energy consumption to reduce the cost of operating equipment, the construction contractors would reasonably be expected to minimize nonessential idling of construction equipment during construction in accordance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9, which limits nonessential idling of diesel-powered off-road equipment to five minutes.

In general, there are no unusual characteristics that would directly or indirectly cause construction activities to be any less efficient than would occur elsewhere (restrictions on equipment, labor, types of activities, etc.). Therefore, project-related construction activities would not result in wasteful or unnecessary electricity demands, and impacts would be less than significant.

## Long-Term Operation Impacts

Operation of the proposed project would create higher demands for transportation energy use, natural gas and electricity demand. Energy use from operation of the proposed project would be from building heating, cooling, and ventilation; water heating; operation of electrical systems; use of on-site equipment and appliances; and indoor, outdoor, perimeter, and parking lot lighting. Energy resources consumed by operation of the proposed project were quantified and are presented in Table 3.

**Table 3 Project Annual Energy Consumption**

| Use Type | Annual Energy Consumption |
|---|---|
| Building – Electricity[1] | 540,759 |
| Parking Lot – Electricity[1] | 49,843 |
| Building – Natural Gas[2] | 840,379 |
| Transportation – Electricity[3] | 6,150 |
| Transportation – Natural Gas[3] | <1 |
| Transportation – Diesel[3] | 222 |
| Transportation – Gasoline[3] | 10,849 |

Source: CalEEMod, version 2022.1.

[1] Energy resource is expressed in kilowatt-hours (kWh/year).

[2] Energy resource is expressed in British thermal units (BTU/year).

[3] Diesel, compressed natural gas (CNG), and gasoline fuels are expressed in gallons. Electric vehicles are expressed in kilowatt-hours (kWh).

### *Electrical Energy*

At minimum, the proposed project would meet the latest Building Energy Efficiency Standards and CALGreen standards. As described in Section 1.3.6, *Green Building Standards*, the proposed project would also include mandatory standards from Divisions 5.1, Planning and Design; 5.2, Energy Efficiency; 5.3, Water Efficiency and Conservation; 5.4, Material Conservation and Resource Efficiency; and 5.5, Environmental Quality, of CALGreen. For example, the proposed project is required to implement the City's Water Efficient Landscape Ordinance, which would reduce the amount of water necessary for landscape irrigation. As shown in Table 3, implementation of the proposed District office building would result in an increase of 540,759 kilowatt-hours of electricity use per year. The new building would be designed to be more energy-efficient compared to the existing office building, and greater proportions of electricity consumed by the proposed building would be sourced from renewable energy sources as the State progresses toward meeting Senate Bill (SB) 100. Therefore, the proposed project is anticipated to decrease overall per capita energy consumption and reliance on fossil fuels from implementation of greater energy efficiencies in building design and materials. In addition, the proposed project would increase reliance on renewable energy sources by installing rooftop solar, as required by Title 24, Part 6, Subchapter 11, Section 140.10(a). Overall, the new building constructed to the standards identified above would not result in wasteful, inefficient, or unnecessary consumption of electricity.

### *Natural Gas Energy*

As shown in Table 3, the new District office building would increase the demand of natural gas for heating by 840,379 BTUs. However, this is a conservative estimate as the existing office building also requires natural gas demand. As mentioned previously, the proposed project would be built to meet the latest Building Energy Efficiency Standards and CALGreen requirements and be designed to have greater energy efficiency than the existing office building. The new energy efficiency building standards would result in a decrease in per capita natural gas consumption for space and water heating. In addition, newly constructed office buildings would be required to comply with Title 24, Part 6, Subchapter 11, Section 140.10(a) of the 2022 California Building Code to include a photovoltaic system meeting the minimum requirements specified by calculations in the code. Therefore, the proposed project is anticipated to decrease reliance on fossil fuels by implementation of greater energy efficiencies in building design and materials. Overall, the new building constructed to the standards identified above would not result in wasteful, inefficient, or unnecessary consumption of natural gas.

### *Transportation Energy*

The proposed project would consume transportation energy during operations from the use of motor vehicles. The project-related vehicle miles traveled (VMT) would primarily come from the employees, staff, and visitors driving to and from the new District office building. The proposed project is expected to generate up to 70 net new ADT on a typical weekday associated with the net increase of 28 staff compared to existing conditions. However, the proposed project would not result in an increase in staff within the District since staff from other locations would relocate to the new District office. Therefore, overall VMT is not expected to increase from existing conditions.

The fuel efficiency of vehicles during the buildout year of 2025 would on average improve compared to vehicle fuel efficiencies experienced under existing conditions, resulting in a lower per capita fuel consumption in 2025 assuming travel distances, travel modes, and trip rates remain the same. The improvement in fuel efficiency

would be attributable to regulatory compliance (e.g., CAFE standards), resulting in new cars that are more fuel efficient and the attrition of older, less fuel-efficient vehicles. Additionally, CARB approved the new Advanced Clean Cars II standards in 2022 that will ensure all new passenger cars, trucks and SUVs sold in the state will be zero-emitting by 2035 (CARB 2022b). The Advanced Clean Cars II standards will amend the Zero-Emission Vehicle Regulation to require an increase in zero-emission vehicles and amends the Low-Emission Vehicle Regulations to include more stringent standards for gasoline cars and heavier passenger trucks to continue to reduce smog-forming emissions. The CAFE standards are not directly applicable to residents or land use development projects, but to car manufacturers. Therefore, compliance with the CAFE standards by car manufacturers and the new Advanced Clean Cars II standards would ensure that vehicles produced in future years would have greater fuel efficiency.

The reconfiguration of the parking lot would also improve vehicle circulation and pedestrian safety by adding new parking spaces in the northeastern portion of the project site. In addition, there is one designated crosswalk near the school property, and the proposed project would not conflict with any of the existing circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Overall, it is expected that operation-related fuel usage associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than similar development projects. Accordingly, impacts would be less than significant, and no mitigation measures would be required.

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

**Less Than Significant Impact.** As discussed in criterion (b) of Section 3.8, *Greenhouse Gas Emissions*, the proposed project would not conflict with the current CARB 2022 Climate Change Scoping Plan and the 2040 Regional Transportation Plan, which plan for use of renewable energy planning and energy efficiency standards. Additionally, the proposed project would adhere to the applicable Roseville General Plan policies related to energy conservation and would be built to the current Building and Energy Efficiency Standards of PRC Title 24, Part 6. The proposed project would not conflict with or obstruct an applicable plan for renewable or energy efficiency. Accordingly, impacts would be less than significant, and no mitigation measures would be required.

## 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.**

**Less Than Significant Impact.** Fault rupture impacts occur when a structure is situated on top of an active fault that displaces in two separate directions during an earthquake. The Alquist-Priolo Earthquake Fault Zoning Act was adopted in 1972 to prevent the construction of buildings in areas where active faults have surface expression. Surface fault rupture is earth surface broken by fault movement. Sudden surface rupture from severe earthquakes can cause extensive property damage, but even slow fault movement (known as "fault creep") can cause displacement that results in offset or disfiguring of curbs, streets, buildings, and other infrastructure.

The proposed project site is not within an Alquist-Priolo Zone, nor is it situated on any known active or potentially active fault (USGS 2021). The nearest fault zoned under the Alquist-Priolo Act is a portion of the Dunnigan Hills Fault approximately 30 miles to the west. Other active faults are south of Lake Oroville, at Lake Tahoe, and in the Coast Ranges, approximately 45 to 60 miles away. While the proximity of the Dunnigan Hills Fault to the subject property could subject it to moderate and possibly strong ground motion, such motion would not be greater than at other sites in seismically active northern California. Impacts would be less than significant.

**ii) Strong seismic ground shaking?**

**Less Than Significant Impact.** The project site is in a seismically active region of northern California. Ground shaking originating from active faults in the region is expected to induce lower horizontal accelerations due to smaller anticipated earthquakes and/or greater distances to other faults. Seismic shaking has the potential to be generated by faults many miles from the project vicinity. Regional faulting is associated with the Foothill Fault System, which consists of several different faults, including the Bear Mountains Fault Zone. The northern portion of the Bear Mountains Fault Zone and the Maidu Fault (east of Folsom Lake) and the northern portion of the Deadman Fault (north of Folsom Lake) have exhibited evidence of movement in the last 700,000 to 1.6 million years. Therefore, these faults are considered potentially active. However, the nearest known active fault is the Cleveland Hills fault, approximately 41 miles north. The Dunnigan Hills and Midland faults, which both have unknown histories of activity and are approximately 13 and 19 miles from Roseville, respectively, present the highest potential to produce ground shaking at the project site. Ground shaking could also originate from seismic activity along the larger, but relatively distant Foothill or San Andreas fault systems, the nearest components of which are approximately 20 and 55 miles from Roseville, respectively. Although seismic activity from these faults could potentially affect the project site, the site is at no greater risk than the surrounding development and infrastructure. Impacts would be less than significant.

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

**Less Than Significant Impact.** Liquefaction refers to loose, saturated sand or silt deposits that behave as a liquid and lose their load-supporting capability when strongly shaken. Loose granular soils and silts that are saturated by relatively shallow groundwater are susceptible to liquefaction. The City of Roseville is composed of well consolidated to very hard, older Pleistocene- to Eocene-age deposits, and active seismic sources are at least 30 miles away (City of Roseville 2020b). Therefore, the project site is not susceptible to post-liquefaction settlement and lateral spreading that would be detrimental to the proposed site

improvements, and liquefaction of the soil and rock beneath the site is considered unlikely. Thus, impacts would be less than significant.

**iv) Landslides?**

**Less Than Significant Impact.** The existing topography at the site and near vicinity consists of low to moderately sloping hillside terrain. The site is not in an area of known historical landslides. There is no evidence of past landslides or soil creep. The potential for the occurrence of a landslide hazard is very low due to the site's generally flat terrain. Therefore, impacts would be less than significant.

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

**Less Than Significant Impact.** Project development would involve grading and construction activities that would temporarily leave disturbed soil vulnerable to erosion if effective erosion control measures were not used. Construction of the proposed project would be required to comply with best management practices (BMP) that reduce or eliminate soil erosion from construction sites. Common means of soil erosion from construction sites include water, wind, and being tracked off-site by vehicles. Compliance with BMPs, such as jute bales, covering loads, truck washing areas, and covering stockpiles of materials would reduce soil erosion during construction. Paved and building areas with maintained landscaping will reduce the potential for erosion during operation. Compliance with BMPs is required by the federal and State Clean Water Acts and is administered by the City of Roseville. Compliance with existing regulations governing erosion from construction sites would ensure the project's impacts on soil erosion would be less than significant.

**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.** Project development would not cause substantial hazards related to liquefaction and landslides, as substantiated in Sections 3.7.a.iii and 3.7.a.iv, respectively. Lateral spreading is the downslope movement of surface sediment due to liquefaction in a subsurface layer. The topography in the vicinity of the project site is relatively flat. Therefore, the potential for lateral spreading at the project site is considered very low. Impacts 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 shrink or swell as the moisture content decreases or increases; the shrinking or swelling can shift, crack, or break structures built on such soils. Typically, soils with high clay contents are most susceptible to these processes. The project site is underlain by Fiddyment loam—Fiddyment 85 percent, Cometa 5 percent, Kaseberg 5 percent, San Joaquin 3 percent, and Alamo 2 percent. The Fiddyment series consists of moderately deep, well-drained soils formed in material weathered from consolidated sediments of mixed rock sources. The average clay content of the textural control section is 27 to 35 percent. Due to the concentration of clay materials in the soil, the project site may be subject to expansive soil (UC Davis & NRCS 2022). If expansive soils are encountered during grading of the site, and if the property owner

desires to use expansive soil to construct engineered fills, then the project applicant shall seek geotechnical recommendations options for constructing fills with potentially expansive soil. Impacts would be less than significant.

**e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?**

**No Impact.** The project site is served by an existing sewer system. The proposed project would not involve the use of septic tanks or any other alternative wastewater disposal systems. Therefore, the proposed project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. No impact would occur.

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

**No Impact.** Paleontological resources are fossilized remains of past life on earth, such as bones, shells, leaves, tracks, burrows, and impressions. There are no unique geological features on site; the project site is currently developed. Therefore, no impact would occur.

# 3.8 GREENHOUSE GAS EMISSIONS

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 a very large one, does not generate enough greenhouse gas (GHG) emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact. PCAPCD adopted a *de minimis*, bright-line threshold for the operational phase of 1,100 metric tons of carbon dioxide equivalence ($MTCO_2e$) per year. Therefore, if the proposed project's construction- and operation-phase GHG emissions exceed this thresholds, GHG emissions would be considered to substantially and cumulatively contribute to statewide GHG emissions in the absence of reduction measures.

## Construction-Phase GHG Emissions

The proposed project would generate GHG emissions during construction activities primarily due to the use of construction equipment—largely diesel powered—and construction workers and haul trucks traveling to and from the project site. As the PCAPCD does not explicitly have a significance threshold for construction GHG emissions, the proposed project's construction GHG emissions were quantified using CalEEMod v2022.1, consistent with the modeling assumptions in the air quality analysis, and were amortized over the expected lifetime of the project (30 years) and added to the operational GHG emissions. Project-related construction-phase GHG emissions are shown in Table 4, *Project-Related Construction GHG Emissions.* As shown in Table 4*,* the proposed project would generate a total 328 $MTCO_2e$ over the course of the 19-month

construction schedule. Over an assumed 30-year lifetime of the proposed project, construction GHG emissions would be an estimated 11 $MTCO_2e$ per year and are added to the proposed project's operational GHG emissions in Table 5.

**Table 4 Project-Related Construction GHG Emissions**

| Year | Total MTCO2e/Year | Percentage of Total Emissions |
|---|---|---|
| 2023 | 158 | 48% |
| 2024 | 157 | 48% |
| 2025 | 13 | 4% |
| **Total Construction** | 328 | 100% |
| Amortized over 30 years | 11 $MTCO_2e$ | - |

Source: CalEEMod, Version 2022.1.
Notes: MT = metric tons; $MTCO_2e$ = metric ton of carbon dioxide equivalent

## Operational-Phase GHG Emissions

Project-related operation-phase GHG emissions are shown in Table 5, *Project-Related Operation GHG Emissions*. Implementation of the proposed project would result in a new office building and would generate up to 130 weekday ADT. Operation of the proposed project would also result in water demand, generation of wastewater and solid waste, area sources (e.g., consumer cleaning products), and energy usage (i.e., natural gas and electricity). As noted in the Air Quality analysis, this analysis considers the full operation of the proposed project and conservatively does not subtract emissions from existing on-site building operations or vehicle trips before comparing against PCAPCD significance thresholds. As shown in Table 5, operation of the proposed project would not generate annual emissions that exceed the PCAPCD's *de minimus* level of 1,100 $MTCO_2e$ per year (PCAPCD 2017). Therefore, the proposed project's cumulative contribution to GHG emissions would be less than significant and no further analysis is required.

**Table 5 Project-Related Operation GHG Emissions**

| Source | GHG Emissions ($MTCO_2e$/Year) | Percentage of Total Emissions |
|---|---|---|
| Mobile | 98 | 36% |
| Area | <1 | <1% |
| Energy | 150 | 55% |
| Water | 5 | 2% |
| Solid Waste | 8 | 3% |
| Refrigerants | <1 | <1% |
| Amortized Construction Emissions | 11 | 4% |
| **Total** | 290 | 100% |
| PCAPCD De Minimis Level for operational phase | 1,100 $MTCO_2e$/Yr | NA |
| **Exceeds Threshold?** | **No** | **NA** |

Source: Appendix A.
Notes: MT = metric tons; $MTCO_2e$ = metric ton of carbon dioxide equivalent

**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 Placer County Transportation Planning Agency's (PCTPA) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). A consistency analysis with these plans is presented below.

### CARB Scoping Plan

CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality on November 16, 2022; the plan lays out a path to achieve carbon neutrality by 2045 or earlier and to reduce the state's anthropogenic GHG emissions (CARB 2022c). The Scoping Plan was updated to address the carbon neutrality goals of Executive Order B-55-18 and AB 1279's GHG reduction target of 85 percent below 1990 levels by 2045.

The CARB Scoping Plan is applicable to state agencies but is not directly applicable to cities/counties and individual projects (i.e., the Scoping Plan does not require the City to adopt policies, programs, or regulations to reduce GHG emissions). However, new regulations adopted by the state agencies outlined in the Scoping Plan result in GHG emissions reductions at the local level. As a result, local jurisdictions benefit from reductions in transportation emissions rates, increases in water efficiency in the building and landscape codes, and other statewide actions that affect a local jurisdiction's emissions inventory from the top down. Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard (LCFS) and changes in the corporate average fuel economy standards (e.g., Pavley I and Pavley California Advanced Clean Cars program).

The proposed project would adhere to the key project attributes, programs, and regulations identified by the Scoping Plan and implemented by state, regional, and local agencies to achieve the statewide GHG reduction goals of AB 32, SB 32, and AB 1279. Future development projects would be required to comply with these state GHG emissions reduction measures because they are statewide strategies. For example, the proposed project and new proposed buildings would meet the latest applicable CALGreen and Building Energy Efficiency Standards in effect at the time when applying for building permits. Therefore, the proposed project's GHG emissions would be reduced by compliance with statewide measures that have been adopted since AB 32, SB 32, and AB 1279 were adopted and would not obstruct implementation of the CARB Scoping Plan. Therefore, impacts would be less than significant.

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

PCTPA adopted the Final 2040 RTP in September 2019 to document the policy direction, actions, and funding recommendations to meet the Placer County's transportation systems over the next 20 years (PCTPA 2019). The 2040 RTP was incorporated into the six-county Metropolitan Transportation Plan developed by the Sacramento Area Council of Governments.

The 2040 RTP identifies new growth areas to accommodate jobs and housing that will balance well with the land use and transportation planning in the county. This long-range planning document has 10 goals, each with supporting policies and objectives, to address the county's traffic congestion, mobility needs, and maintenance

of existing transportation infrastructure. Some of the overarching goals in the 2040 RTP are to maintain countywide roadway systems, provide regionally and locally coordinated transit service that connects residential areas with employment centers, improve passenger rail service, promote aviation services that complement the countywide transportation system, provide safe and efficient movements of goods throughout the county, and promote a convenient nonmotorized transportation system (PCTPA 2019). The 2040 RTP transportation projects help more efficiently distribute population, housing, and employment growth, and forecast development is generally consistent with regional-level general plan data to promote active transportation and reduce GHG emissions. The projected regional development, when integrated with the proposed regional transportation network in the 2040 RTP, would reduce GHG emissions related to vehicular travel and improve air quality.

The 2040 RTP does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency for governments and developers. As stated previously, implementation of the proposed project would not result in an increase in staff in the District but would relocate staff to the new proposed District office. Therefore, the proposed project is expected to result in a net neutral effect on existing vehicle trip generation in the District. The proposed project would not be considered a regionally significant project and would not directly induce substantial population growth. Therefore, the proposed project would not interfere with PCTPA's ability to implement the regional strategies in the 2040 RTP, and impacts would be less than significant.

## 3.9 HAZARDS AND HAZARDOUS MATERIALS

The term "hazardous material" is defined in different ways by different regulatory programs. For purposes of this environmental document, the definition of "hazardous material" is similar to that in the California Health and Safety Code, Section 25501:

> Hazardous materials that, because of their quantity, concentration, or physical or chemical characteristics, pose a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

"Hazardous waste" is a subset of hazardous materials, and the definition is essentially the same as that in the California Health and Safety Code, Section 25517, and in the California Code of Regulations, Title 22, Section 66261.2:

> Hazardous wastes are those that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may either cause, or significantly contribute to an increase in mortality or an increase in serious illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Hazardous materials can be categorized as hazardous nonradioactive chemical materials, radioactive materials, and biohazardous materials (infectious agents such as microorganisms, bacteria, molds, parasites, viruses, and medical waste).

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 activities of the proposed project would involve the use of larger amounts of hazardous materials than would project operation. Construction activities would include the use of materials such as cleansers and degreasers; fluids used in routine maintenance and operation of construction equipment, such as oil and lubricants; fertilizers; pesticides; and architectural coatings, including paints. However, the materials used would not be in such quantities or stored in such a manner as to pose a significant safety hazard. These activities would also be short term or one time in nature and would cease upon completion of the construction phase. Project construction workers would also be trained in safe handling and hazardous materials use.

The use, storage, transport, and disposal of construction-related hazardous materials and waste would be required to conform to existing laws and regulations, including the California Department of Toxic Substances Control, US Environmental Protection Agency, California Division of Occupational Safety and Health, California Department of Transportation, Placer County Division of Environmental Health, and the Roseville Fire Department. Title 40 of the Code of Federal Regulations, Part 263, establishes standards that apply to persons transporting hazardous waste. If a transporter discharges or spills hazardous waste, he or she is required to take appropriate, immediate action to protection human health and the environment, such as notifying local authorities. Compliance with applicable laws and regulations governing the use, storage, and transportation of hazardous materials through the implementation of established safety practices, procedures, and reporting requirements would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the potential for safety impacts. For example, all spills or leakage of petroleum products during construction activities are required to be immediately contained, the hazardous material identified, and the material remediated in compliance with applicable state and local regulations for the cleanup and disposal of that contaminant. All contaminated waste encountered would be required to be collected and disposed of at an appropriately licensed disposal or treatment facility. Furthermore, strict adherence to all emergency response plan requirements by the City of Roseville would be required through the duration of the construction phase. Therefore, hazards to the public or the environment arising from the routine use of hazardous materials during construction would be less than significant and no mitigation measures are necessary.

## Operation

Operation of the proposed project would involve the limited use of hazardous materials for air conditioning, janitorial, maintenance, and repair activities. These materials would include cleansers, paints, degreasers, adhesive, sealers, fertilizers, and pesticides for cleaning and maintenance purposes. However, these types of materials are not considered acutely hazardous and would be used in limited quantities. Additionally, school

facilities are not associated with uses that use, generate, store, or transport large quantities of hazardous materials—such uses generally include manufacturing, industrial, medical (e.g., hospital), and other similar uses.

Furthermore, the use, storage, transport, and disposal of hazardous materials of the proposed project would be required to comply with existing regulations of several agencies, including the California Department of Toxic Substances Control, US Environmental Protection Agency, California Division of Occupational Safety and Health, California Department of Transportation, Placer County Division of Environmental Health, and the Roseville Fire Department. Compliance with applicable laws and regulations governing the use, storage, transport, and disposal of hazardous materials through the implementation of established safety practices, procedures, and reporting requirements would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the potential for safety impacts.

Therefore, hazards to the public or the environment arising from the routine use, storage, transport, and disposal of hazardous materials during long-term operation of the proposed project would not occur. Impacts 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.** See response to Section 3.9.a., above. As concluded in this section, hazards to the public or the environment arising from the routine use of hazardous materials during project construction and operation phases would be less than significant and no mitigation measures are necessary.

**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 proposed project is next to Oakmont High School, immediately to the south and west of the project site; Oakmont High School is the only school within one-quarter mile. As discussed above under Responses 3.9(a) and 3.9(b), the use of hazardous materials and substances during the operation of the proposed project is generally minimal and in small quantities. All hazardous materials and substances at the proposed project site would be subject to federal, state, and local health and safety requirements—e.g., Resource Conservation and Recovery Act; California Hazardous Waste Control Law; and principles prescribed by the California Department of Health Services, Centers for Disease Control and Prevention, and National Institutes of Health—and the proposed project would be under the regulatory oversight of agencies such as the Placer County Division of Environmental Health, Department of Toxic Substance Control, and the Regional Water Quality Control Board. The proposed project would result in a less than significant impact with regard to the emission or handling of hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of an existing or proposed school and no mitigation measures are necessary.

**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?**

**No Impact.** The State's Hazardous Waste and Substances Sites List (Cortese List, Government Code Section 65962.5) identifies sites with leaking underground fuel tanks, hazardous waste facilities subject to corrective actions, solid waste disposal facilities from which there is a known migration of hazardous waste, and other sites where environmental releases have occurred. According to review of the information available on the State Water Resource Control Board's (SWRCB) Geotracker and the Department of Toxic Substances Control's Envirostor websites, the project site is not identified as containing hazardous materials contamination or the storage of hazardous materials (DTSC 2022) and is not identified as containing a leaking underground storage tank site or another cleanup site (SWRCB 2022). There are no other known sites containing hazardous materials contamination in the project area that would have the potential to impact the project site. Therefore, no impact to the public or to the environment would occur as a result of the project and no mitigation measures are necessary.

**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 project site is not within an airport land use plan and there are no public airports or private airstrips within two miles of the site. The nearest airport to the project site is Sacramento McClellan airport, approximately 8.8 miles southwest. Therefore, no impact would occur and no mitigation measures are necessary.

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

**Less Than Significant Impact.** Compliance with the Standardized Emergency Management System, California Code of Regulations, Title 19, Division 2, Section 2443, must "be documented in the areas of planning, training, exercise, and performance." The City of Roseville Emergency Operations Plan (EOP) was approved by the city council in June 2011. The purpose of the EOP is to provide the basis for a coordinated response before, during, and after a disaster incident affecting Roseville. Under the EOP, during a local level emergency or disaster, the Director of Emergency Services is responsible for organizing and directing the preparedness efforts of the City's emergency operations and mutual aid partners.

The proposed project would not interfere with the implementation of the EOP or any of the daily operations of the City's emergency operation center, Roseville Fire Department, or Roseville Police Department. All construction activities would be required to be performed per the City's and fire department's standards and regulations. For example, the proposed project would be required to provide the necessary on- and off-site access and circulation for emergency vehicles and services during the construction and operation phases. The proposed project would also be required to go through the City's development review and permitting process and would be required to incorporate all applicable design and safety standards and regulations of the Roseville Fire Department and the Fire Safe Regulations (Fire Code) of the City's Code of Ordinances to ensure that it

does not interfere with the provision of local emergency services (provision of adequate access roads to accommodate emergency response vehicles, adequate numbers/locations of fire hydrants, etc.).

Therefore, the proposed project would not impair implementation of or physically interfere with the City of Roseville's emergency response or evacuation plans. Project-related impacts would be less than significant, and no mitigation measures are necessary.

**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.** A wildland fire hazard area is typically characterized by areas with limited access, rugged terrain, limited water supply, and combustible vegetation. As explained in Section 3.20, *Wildfire*, the project site is in an urban unzoned fire hazard severity zone (FHSZ) in the local responsibility area (LRA) (CAL FIRE 2007). The project site is also in a wildland urban interface zone (CAL FIRE 2019). Development of the project would comply with all City of Roseville requirements, including fire flows, on-site hydrants, and backflow assemblies. Project design and construction would comply with requirements for building materials and construction methods for new buildings in a FHSZ in California Building Code (CBC) (California Code of Regulations Title 24 Part 2) Chapter 7A. Chapter 7A contains requirements for roofing; attic ventilation; exterior walls; exterior windows and glazing; exterior doors; decking; protection of underfloor, appendages, and floor projections; and ancillary structures. The project would also comply with California Fire Code (CFC) (California Code of Regulations Title 24 Part 9) Chapter 49, whose requirements generally parallel those in CBC Chapter 7A. Compliance with the above codes and regulations, would ensure that the proposed project would not result in a fire hazard or exacerbate the fire risk in the project area. Adherence to existing local, state, and federal laws would ensure that this impact remains 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.**

## Construction

As part of Section 402 of the Clean Water Act, the US Environmental Protection Agency has established regulations under the National Pollution Discharge Elimination System (NPDES) program to control direct stormwater discharges. The NPDES program regulates industrial pollutant discharges, which include construction activities. In California, the SWRCB administers the NPDES permitting program and is responsible for developing NPDES permitting requirements.

The City of Roseville Municipal Code Chapter 14.20 requires development to comply with a Municipal Separate Storm Sewer System (MS4) Permit from the Central Valley Regional Water Quality Control Board. Section F.1 of the MS4 permit specifies requirements for new developments, and Section F.1.D details the requirements

for standard stormwater mitigation plans (also known as water quality management plans). The MS4 permit imposes pollution prevention requirements on planned developments, construction sites, commercial and industrial businesses, municipal facilities and activities, and residential activities.

Requirements for waste discharges potentially affecting stormwater from construction sites of one acre or more are in the SWRCB's Construction General Permit, Order No. 2012-0006-DWQ, issued in 2012. The site is larger than one acre and would be subject to requirements of the Construction General Permit. Projects obtain coverage under the Construction General Permit by filing a Notice of Intent with the SWRCB prior to grading activities and preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP) during construction. The primary objective of the SWPPP is to identify, construct, implement, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the project site, and to contain hazardous materials. Categories of BMPs used in SWPPPs are described in Table 6, *Construction Best Management Practices*.

**Table 6 Construction Best Management Practices**

| Category | Purpose | Examples |
|---|---|---|
| Erosion Controls and Wind Erosion Controls | Cover and/or bind soil surface, to prevent soil particles from being detached and transported by water or wind | Mulch, geotextiles, mats, hydroseeding, earth dikes, swales |
| Sediment Controls | Filter out soil particles that have been detached and transported in water | Barriers such as straw bales, sandbags, fiber rolls, and gravel bag berms; desilting basin; cleaning measures such as street sweeping |
| Tracking Controls | Minimize the tracking of soil offsite by vehicles | Stabilized construction roadways and construction entrances/exits; entrance/outlet tire wash |
| Non-Storm Water Management Controls | Prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance and fueling of vehicles and equipment. Conduct various construction operations, including paving, grinding, and concrete curing and finishing, in ways that minimize non-stormwater discharges and contamination of any such discharges | BMPs specifying methods for: paving and grinding operations; cleaning, fueling, and maintenance of vehicles and equipment; concrete curing; concrete finishing |
| Waste Management and Controls (i.e., good housekeeping practices) | Management of materials and wastes to avoid contamination of stormwater | Spill prevention and control, stockpile management, and management of solid wastes and hazardous wastes |

Source: CASQA 2015.

The project's construction contractor would be required to prepare and implement a SWPPP and associated BMPs in compliance with the CGP during grading and construction. The SWPPP would specify BMPs, such as those outlined in Table 6, that the construction contractor would implement to protect water quality by eliminating and/or minimizing stormwater pollution prior to and during grading and construction and show the placement of those BMPs. Additional construction BMPs that would be incorporated into the project's SWPPP and implemented during the construction phase include, but are not limited to:

- Perimeter control with silt fences and perimeter sandbags and/or gravel bags.
- Stabilized construction exits with rumble strip(s)/plate(s).
- Installation of storm drain inlet protection on affected on-site drains and within roadways.
- Installation of silt fences around stockpile and covering of stockpiles.

- Use of secondary containment around barrels, containers, and storage materials that may impact water quality.
- Stabilization of disturbed areas where construction ceases for a determined period (e.g., one week) with erosion controls.
- Installation of temporary sanitary facilities and dumpsters.

BMPs identified in the SWPPP would reduce or avoid contamination of stormwater with sediment and other pollutants such as trash and debris; oil, grease, fuels, and other toxic chemicals; paint, concrete, asphalt, bituminous13 materials, etc.; and nutrients. Adherence to the BMPs in the SWPPP would reduce, prevent, minimize, and/or treat pollutants and prevent degradation of downstream receiving waters.

Based on the preceding, water quality and waste-discharge impacts from project's grading and construction activities would be less than significant.

### Operation

Operational-related activities of the proposed project (e.g., runoff from parking areas, solid waste storage areas, and landscaped areas) would generate pollutants that could adversely affect the water quality of downstream receiving waters if effective measures are not used to keep pollutants out of and remove pollutants from urban runoff. Therefore, the City is responsible for reviewing project plans and ensuring that requirements for waste discharges potentially affecting stormwater from project operations are met.

These requirements are in Chapter 14.20, Urban Stormwater Quality Management and Discharge Control, of the municipal code. As previously stated, the proposed project is subject to the NPDES permit. Compliance with the NPDES permit includes the incorporation of BMPs into the project's standard urban stormwater mitigation plan. The project applicant is required to prepare a stormwater mitigation plan that includes the BMPs necessary to control stormwater pollution from the completed project. The structural or treatment control BMPs (including, as applicable, post-construction treatment control BMPs) in the stormwater mitigation plan must meet the design standards in the municipal NPDES permit. Stormwater mitigation plan requirements include minimizing stormwater pollutants and limiting peak post-project stormwater runoff rates to no greater than predevelopment rates where increased runoff could increase downstream erosion.

As part of the approval process, the City is responsible for reviewing the plan to ensure that all applicable requirements have been addressed and that the applicant has identified BMPs necessary to protect the municipal separate storm sewer system from discharges. The BMPs could include maintaining landscaping using minimum or no pesticides, providing an adequate number of receptacles while keeping them covered, and sweeping sidewalks regularly to prevent accumulation of litter and debris. Project design features, such as areas draining to BMPs, would address the anticipated and expected pollutants of concern during the project's operational phase. On-site landscaping would assist in minimizing the amount of runoff from the site by providing permeable areas for water infiltration and decreasing runoff volume. Infiltration through landscaped areas would serve as a water treatment function.

Moreover, no grading permit shall be issued by the Division of the State Architect until the City confirms that the project's stormwater mitigation plan complies with the applicable municipal NPDES permit requirements. Based on the preceding, the project would comply with water quality standards, and impacts are 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 proposed project is in the Sacramento Valley Groundwater Basin, the major groundwater basin in the Sacramento River hydrologic region, with 18 subbasins. Roseville is in the North American subbasin (Basin Code 5-021.64), which underlies northern Sacramento, southern Sutter, and western Placer counties. The subbasin is bounded by the Bear River on the north, the Feather River and Sacramento Rivers on the west, the American River on the south, and a north-south line extending from the Bear River south to Folsom Lake that passes about two miles east of the city of Lincoln. The subbasin encompasses approximately 351,000 acres. The Department of Water Resources estimates that the storage capacity of the North American subbasin is approximately 4.9 million acre-feet.

The project site is in the eastern portion of Roseville where direct recharge is possible by applying water to the land because this area is along the eastern side of the North American groundwater subbasin, where coarse-grained soils are underlain by coarse-grained sediments that are directly connected to the groundwater aquifers (City of Roseville 2022b). Water applied in this area would migrate through the groundwater aquifer to the southwestern corner of the city. However, the project site is mostly developed and consists of impervious surfaces. Therefore, development of the site would not be expected to substantially impede groundwater recharge. Furthermore, the implementation of low-impact development techniques, as required by the West Placer Stormwater Quality Design Manual: Stormwater Quality BMP Guidance Manual for Construction, the City of Roseville Stormwater Management Program would preserve some of the ability of stormwater to percolate to the groundwater aquifer in developed areas (to the extent that such recharge occurs). Implementation of the City's Water Efficient Landscape Ordinance would reduce the amount of water that is necessary for landscape irrigation, helping to conserve groundwater supplies on a regional level.

With regard to groundwater supply, drinking water for the City of Roseville is primarily supplied from surface water obtained from Folsom Reservoir. However, the City currently operates 6 groundwater wells and has plans to construct 10 more. The existing wells are capable of delivering a total of 17,500 acre-feet/year. When all 10 wells are constructed, they would increase the City's groundwater pumping capacity to 43,800 acre-feet/year. The City's groundwater wells are primarily used for backup water supply and to improve water supply reliability during drought and emergency conditions. It is the City's policy to use groundwater for water supply only in times of shortage.

With regard to groundwater recharge in relation to water supply, the City's aquifer storage and recovery program allows it to maximize sustained use of the groundwater basin in conjunction with surface water supplies, while providing a strong backup water supply during critically dry years, consistent with the City's commitments contained in the Water Forum Agreement. The City's program is designed to inject and store surplus drinking water in the underlying aquifer during periods of normal and above normal precipitation. This stored drinking

water can be extracted and used to meet peak demands during dry years. The City currently operates one groundwater injection well. At full buildout of the program, the City envisions a network of up to 12 groundwater injection wells that could store up to 10,000 acre-feet/year of water (City of Roseville 2022b). The aquifer storage and recovery program ensures that the City's use of groundwater does not substantially deplete groundwater supplies.

Section 3.19.a., *Utilities and Service Systems*, substantiates that Roseville will have adequate water supplies to meet water demands in its service area through 2045 during normal years—in single dry years and some multiple dry years, water supply deficit may occur. However, according to the City of Roseville 2020 Urban Water Management Plan, remaining deficits will be mitigated by potable water conservation measures implemented as part of the Water Shortage Contingency Plan (City of Roseville 2022b).

In addition, the Western Placer County Groundwater Management Plan was developed to provide planned and coordinated monitoring, operation, and administration of groundwater basins with the goal of long-term groundwater resource sustainability, and to comply with the passage of the 1992 Groundwater Management Act (AB 3030, Water Code Part 2.75, Section 10750 et seq.). The City's groundwater and water supply master planning is in alignment with this plan and will not impede plan implementation.

Based on past construction activities on-site, it is not anticipated that the proposed underground utility trenches will encounter shallow groundwater. Therefore, the project would not impede sustainable groundwater management, and impacts are 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?**

**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.** Please refer to issue b) in Section 3.7, *Geology and Soil*s, for further discussion of erosion. Surface water drainage would be controlled by building regulations, with the water directed to existing streets, flood control channels, storm drains, and catch basins. The proposed drainage for the site would not channel runoff onto exposed soils, would not direct flows over unvegetated soils, and would not otherwise increase the erosion or siltation potential of the site or any downstream areas. As discussed above, the proposed project is subject to NPDES requirements and the countywide MS4 permit. Additionally, the project applicant is required to submit a SWPPP to reduce erosion and sedimentation of downstream watercourses during project construction. Furthermore, the applicant is required to prepare and submit a detailed erosion control plan. Implementation of this plan would address any erosion issues associated with proposed grading and site preparation. Although future development would create new impervious surfaces on the property, development associated with the proposed project would result in opportunities for landscaped areas to be utilized for stormwater retention.

The project-specific water quality management plan provides BMPs for after construction, such as sweeping sidewalks regularly to prevent accumulation of litter and debris. Therefore, the proposed project would not result in substantial erosion or siltation on- or off-site. Additionally, the permeable asphalt parking lot would reduce impacts from on- or off-site flooding. Therefore, this impact is 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 proposed project is required to comply with the City of Roseville Municipal Code Chapter 14.20, which requires development to comply with an MS4 permit from the Central Valley Regional Water Quality Control Board. Drainage from the project site would flow via surface flow into the existing storm drains on Cirby Way north of the project site. The proposed project would disperse runoff to adjacent pervious areas and small collection areas where runoff could be retained. Therefore, increases in runoff as a result of the project would not exceed the capacity of the existing stormwater system, and impacts are less than significant.

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

**Less Than Significant Impact.** The project site is designated by the Federal Emergency Management Agency as being within Zone X, indicating minimal risk of flooding (FEMA 2021). Moreover, the project site is not in a 100- or 500-year flood zone (FEMA 2021). The proposed project would result in a total of 0.37 acre of new impervious surfaces, or approximately 15 percent of the total project site. Although the proposed project would increase impervious surfaces, the project site is not in an area of flood risk, and on-site landscaping would reduce impacts from on- or off-site flooding. Therefore, impacts are less than significant.

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

**No Impact.** As provided in 3.10.c.iv, the project site is not within a flood hazard zone. The project site is not in an area that is subject to seiches, mudflows, or tsunamis due to the absence of any nearby bodies of water and mud/debris channels. In addition, the project is not in the vicinity of any levees. Therefore, the project would not be exposed to seiches, mudflows, or tsunami hazards, and no 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 provided in section 3.10.b, above, the project site is within a groundwater management plan. The City's groundwater and water supply master planning is in alignment with Western Placer County Groundwater Management Plan, and will not impede plan implementation. Development of the site would not be expected to substantially impede groundwater recharge or decrease water supplies. The proposed project would comply with water quality requirements in the Statewide Construction General Permit, the NPDES, and the City of Roseville Municipal Code Chapter 14.20, Urban Stormwater Quality Management

and Discharge Control. Therefore, the project would not impede sustainable groundwater management of the basin, and impacts are less than significant.

## 3.11 LAND USE AND PLANNING

Would the project:

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

**No Impact.** The proposed project would not divide an established residential community because it would occur entirely on an existing school property with a parking lot. Therefore, no impact would occur, and no mitigation measures are necessary.

**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.** Implementation of the proposed project would generally not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. The project site is in the City of Roseville and the prevailing adopted planning and regulatory documents that govern development and use of the project site are the City of Roseville General Plan and Zoning Ordinance (Title 19 of the City of Roseville Municipal Code). The City of Roseville General Plan land use designations of the project site is Public Quasi-Public (P/QP) and Medium-Density Residential (MDR). The project site is zoned Public/Quasi Public (P/QP) and Two-Family Residential (R-2) (City of Roseville 2022a). The proposed District office is permitted under the P/QP and MDR land use designations and P/QP and R-2 zoning districts. As the location of the proposed project is compatible with the surrounding land uses, no impact would occur, and no mitigation measures are necessary.

## 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.** No mineral resource recovery sites of statewide or regional significance are on or in the immediate vicinity of the project site. Additionally, mining on the project site would be incompatible with the surrounding uses, which consist mostly of residential uses. Mining is also not a permitted use under the site's general plan land use and zoning designations. Implementation of the proposed project would not result in the loss of availability of a known mineral resource or resource recovery site. No mineral resource impact would occur, and no mitigation measures are necessary.

**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?**

**No Impact.** As discussed above in the response 3.12(a), no mineral resource recovery sites are identified on or in the immediate vicinity of the project site. There would be no loss of availability of locally important mineral resources, and no impact would occur. No mitigation measures are necessary.

# 3.13 NOISE

## Noise Fundamentals

Noise is defined as unwanted sound and 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, the 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. Additional information on noise and vibration fundamentals and applicable regulations are in Appendix B.

## Existing Noise Environment

The project site is in a predominantly residential area in the City of Roseville along Cirby Way. The project site includes the existing Roseville Joint Union High School District office with parking. As shown in Figure 3, *Aerial Photograph*, to the north of the project site across Cirby Way are residences and the Roseville Church of Christ, to the east are additional adjacent residences, and to the west and south is Oakmont High School.

Noise in the vicinity of the project site is primarily characterized by roadway noise from Cirby Way and Alan S. Hart Freeway (SR-80). Noise from nearby residential uses (e.g., property maintenance noise) and existing school uses also contribute to the overall noise environment in the project vicinity. To establish existing conditions, the City of Roseville's Existing Roadway Noise Contours (Figure IX in the Roseville General Plan Noise Element) is referenced. According to the existing noise contours, the project site is within the SR-80 65 dBA CNEL contour and slightly within the 70 dBA CNEL Cirby Way noise contour.

### *Sensitive Receptors*

Certain land uses are particularly sensitive to noise and vibration. These uses include residences, schools, hospital facilities, houses of worship, and open space/recreation areas where quiet environments are necessary for the enjoyment, public health, and safety of the community. The nearest sensitive receptors to the project site are the residences immediately to the east and north across Cirby Way, the Church of Christ to the northeast, and Oakmont High School to the west and south of the project site.

# 3. Environmental Analysis

## Applicable Standards

### *California Building Code*

The State of California's noise insulation standards for nonresidential uses are codified in the CBC and CALGreen. CALGreen noise standards are applied to new or renovation construction projects in California to control interior noise levels resulting from exterior noise sources. Proposed projects may use either the prescriptive method (Section 5.507.4.1) or the performance method (Section 5.507.4.2) to show compliance. Under the prescriptive method, a project must demonstrate transmission loss ratings for the wall and roof-ceiling assemblies and exterior windows in a noise environment of 65 dBA CNEL or higher. Under the performance method, a project must demonstrate that interior noise levels do not exceed 50 dBA $L_{eq(1hr)}$.

### *City of Roseville Municipal Code*

Stationary sources of noise are governed under Roseville Municipal Code, Chapter 9.24, Noise Regulation. Section 9.24.100 states that, for non-transportation or fixed sound sources, no person shall, within the city, create any sound, radiated for extended periods from any premises which produces a sound pressure level at any point on the property in excess of 50 dBA $L_{eq}$ and 70 dBA $L_{max}$ during the daytime hours of 7:00 am to 10:00 pm or 45 dBA $L_{eq}$ and 65 dBA $L_{max}$ during the nighttime hours of 10:00 pm to 7:00 am. It is unlawful for any person to create or allow the creation of any sound that exceeds these standards by more than 3 dBA or exceed the existing ambient by 3 dBA or more (whichever is greater). Lastly, the sound level standards shall be reduced by 5 dBA for simple tone noises consisting of speech and music. However, in no case shall the sound level standard be lower than the ambient sound level plus 3 dBA.

Section 9.24.030 of the municipal code also exempts the following noise sources from the provisions of the municipal code:

- Sound sources typically associated with residential uses (e.g., children at play, air conditioning and similar equipment, but not including barking dogs).
- Sound sources associated with property maintenance (e.g., lawn mowers, edgers, blowers, pool pumps, power tools, etc.) provided such activities take place between the hours of 8:00 am and 9:00 pm.
- The normal operation of public and private schools typically consisting of classes and other school-sponsored activities.
- Private construction (e.g., construction, alteration or repair activities) between the hours of 7:00 am and 7:00 pm Monday through Friday, and between the hours of 8:00 am and 8:00 pm Saturday and Sunday; provided, however, that all construction equipment shall be fitted with factory installed muffling devices and that all construction equipment shall be maintained in good working order.

### *Federal Transit Administration*

The City of Roseville does not have a quantified threshold for temporary construction noise and vibration. Therefore, to determine impact significance, the following Federal Transit Administration (FTA) criteria are adopted.

A vibration or construction noise impact would occur if:

- Vibration levels would exceed 0.20 inches/second (in/sec) peak particle velocity (PPV) at the façade of a nonengineered structure (e.g., wood-frame residential).
- Project construction activities would generate noise levels greater than 80 dBA $L_{eq}$ at the sensitive receptor property line.

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 with Mitigation.** Following is a discussion of the temporary and permanent noise impacts as a result of the project's construction and operational phases.

## Construction Noise

The total duration for project construction is anticipated to be approximately one year and six months, with a tentative start date of June 2023. 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 Vehicles*

The transport of workers and materials to and from the construction site would incrementally increase noise levels along site access roadways. Individual construction vehicle pass-bys may create momentary noise levels of up to approximately 85 dBA $L_{max}$ at 50 feet from the worker and vendor vehicles. However, these occurrences would generally be infrequent and short-lived.

Worker and vendor trips would range between 3 and 38 daily trips during individual and overlapping construction phases. Haul truck trips would range between 8 and 52 trips. A maximum of 78 combined worker, vendor, and haul truck trips would occur during overlapping phases. Site access would be through Cirby Way, which has existing ADT volumes of 13,560.[4] The addition of up to 78 daily construction trips would result in a temporary noise increase of less than 0.1 dBA CNEL, which would not be a substantial nor permanent noise

[4] Based on traffic data published by the City of Roseville.

increase. Therefore, construction-vehicle noise impacts would be considered less than significant, and no mitigation measures are necessary.

### *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 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 (demolition, site preparation, building construction etc.). Equipment for grading, asphalt demolition, paving, and site preparation is modeled at spatially averaged distances (i.e., from the center of each activity to the property line of the nearest receptors) because the area around the center of construction activities best represents the potential average ($L_{eq}$) construction-related noise levels at the various sensitive receptors. Construction equipment for building demolition, building construction, and architectural coating is modeled from the edge of the new proposed building and from edge of proposed building demolition to the nearest sensitive receptors. Lastly, utility trenching and landscaping finishing typically occurs along the edge of project boundary and is modeled within 50 of the project boundary to the nearest sensitive receptors.

The project's expected construction equipment mix was categorized by construction activity using the Federal Highway Administration Roadway Construction Noise Model (FHWA RCNM). The associated, aggregate sound levels—grouped by construction activity—are summarized in Table 7. FHWA RCNM modeling input and output worksheets are in Appendix B.

**Table 7 Project-Related Construction Noise by Activity Phase, dBA $L_{eq}$**

| Construction Activity Phase | RCNM Reference Noise Level | Residences/Church to the North | Residences to the East | West Oak High School Buildings to West |
|---|---|---|---|---|
| *Distance in Feet* | *50* | *150* | *60* | *570* |
| Building Demolition | 79 | 69 | 77 | 58 |
| *Distance in Feet* | *50* | *150* | *130* | *640* |
| Rough Grading (P1 and P2) | 80 | 71 | 72 | 58 |
| Fine Grading | 83 | 73 | 75 | 61 |
| Asphalt Demolition P1 and P2 | 77 | 67 | 68 | 55 |
| Site Preparation | 78 | 73 | 75 | 61 |
| Paving | 82 | 72 | 74 | 60 |
| *Distance in Feet* | *50* | *100* | *50* | *450* |
| Utility Trenching | 83 | 77 | **83** | 64 |
| Finish and Landscaping | 75 | 69 | 75 | 56 |
| *Distance in Feet* | *50* | *250* | *50* | *500* |
| Building Construction | 68 | 54 | 68 | 48 |
| Architectural Coating | 74 | 60 | 74 | 54 |
| Maximum dBA $L_{eq}$ | | 77 | **83** | 64 |
| Exceed 80 $L_{eq}$ dBA Threshold? | | No | **Yes** | No |

Notes: Calculations performed with the FHWA RCNM software are in Appendix B.
**Bold** = Exceeds FTA 80 dBA Leq Threshold.

As shown in Table 7, on-site construction-related noise levels would exceed the 80 dBA $L_{eq}$ threshold by 3 dBA during utility trenching activities at the nearest sensitive receptors east of the project site. As stated in Section 9.24.030, Exemptions, of the Roseville Municipal Code, all construction equipment shall be fitted with factory-installed muffling devices. A study prepared for the US Department of Transportation found that improved muffling will generally lower the overall noise level by 1 to 3 dBA, and in cases where a particular piece of equipment either does not have a muffler or has a very poor muffler, the application of a good muffler will reduce overall noise by 6 to 12 dBA (Toth 1979). The construction equipment modeled is assumed to not have any mufflers or sound attenuating devices installed. Therefore, the estimated noise levels are conservative. The project would comply with Section 9.24.030 of the municipal code and install factory muffling devices. By compliance, construction noise would be reduced by at least 6 dBA. Therefore, construction noise levels would be reduced to 77 dBA or less, and impacts would be less than significant.

## Operational Noise

### *Mobile Noise*

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels at 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 are detectable 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 exterior environment. Based on this, the following thresholds of significance,

similar to those recommended by the Federal Aviation Administration, are used to assess traffic noise impacts at sensitive receptor locations. A significant impact would occur if traffic noise increase would exceed:

- 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.

Based on the trip rate assumption of 2.5 daily trips per employee, as identified in Section 3.17, *Transportation*, and based on existing ADT volumes published by the City, the traffic noise increase was estimated. It is estimated that the project would relocate a total of 28 employees from various other District offices to the new proposed District building. This increase in staff would increase traffic trips along local roadways by approximately 70 daily trips.[5] The project site is accessed via Cirby Way and, based on traffic volumes published by the City, existing daily traffic along Cirby Way west of Rocky Ridge Drive is 13,560 ADT. To estimate the potential noise increase, the existing plus project daily trips are compared to existing no project daily trips.[6] The addition of 70 daily trips along Cirby would result in a traffic noise increase of less than 0.1 dBA CNEL. This would not exceed any of the established traffic noise thresholds. Therefore, traffic noise increases from the proposed project would be less than significant and no mitigation measures are necessary.

### *Project-Related Stationary Noise*

#### ***Mechanical Equipment Noise***

Though Section 9.24.030 of the municipal code exempts noise from air conditioning and similar equipment, this is only when associated with residential uses. Therefore, noise from potential heating, ventilation, and air conditioning (HVAC) equipment associated with the new District building is analyzed. Typical HVAC equipment generates noise levels up to 72 dBA at a distance of 3 feet. To be conservative, it is assumed that HVAC equipment would be installed at the nearest edge of the building to sensitive receptors. The nearest residential property line to the new proposed building is approximately 50 feet to the east. At this distance, noise levels would attenuate to 48 dBA. HVAC noise levels would potentially exceed the City's nighttime noise standards of 45 dBA for stationary noise sources. Therefore, impacts would be potentially significant. However, with Mitigation Measure NOI-1, HVAC noise would be reduced to a less than significant impact.

## Mitigation Measures

NOI-1 Mechanical equipment shall be selected and designed to meet the City's noise limits of 50 dBA $L_{eq}$ and 45 dBA $L_{eq}$ at residential uses during daytime and nighttime, respectively. A qualified acoustical consultant shall be retained to assist in selecting and reviewing mechanical noise specification to confirm noise code compliance. Noise reduction measures could include, but are not limited to:

- Selection of equipment that emits noise levels of 45 dBA or less at a distance of 50 feet.

[5] 2.5 daily trips x 28 employees = 70 ADT
[6] 10*Log[(13,630)/13,560) = <0.1 dBA CNEL.

- Installation of noise-dampening techniques, such as enclosures and parapet walls, to block the line-of-sight between the noise source and the nearest receptors to reduce noise levels to 45 dBA or less.

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

**Less Than Significant Impact With Mitigation Incorporated.** Following is a discussion of the project's temporary and operational vibration impacts as a result of the project's construction and operational phases.

## Operational Vibration

Project operation would not include any substantial long-term vibration sources. Therefore, no significant vibration impacts would occur.

## Construction Vibration

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 structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures.

For reference, a vibration level of 0.20 in/sec PPV is used as the limit for nonengineered timber and masonry buildings, which would conservatively apply to the surrounding structures (FTA 2018). To determine potential vibration-induced architectural damage, the distance from the vibration source (construction equipment) to the vibration-sensitive receptors, which include a school, church, and residences, is measured from the edge of the construction site to the nearest building façade. Vibration-induced architectural damage is assessed in terms of PPV. As shown in Table 8, PPV levels for typical construction equipment would exceed the 0.20 in/sec PPV standard at the nearest vibration sensitive receptors to the east of the project site because construction equipment could be approximately 10 feet away from the façade of the nearby residences.

Paving and grading activities could occur within 10 feet of residences to the east along Crestmont Avenue. As shown in Table 8, vibration from a vibratory roller, jackhammer, loaded trucks, and large mobile equipment used for grading (represented by large bulldozer) could exceed 0.20 in/sec PPV at 10 feet. Therefore, impacts would be potentially significant. However, with Mitigation Measure NOI-2, potential vibration damage impacts would be reduced to less than significant.

**Table 8 Vibration Damage Levels for Typical Construction Equipment**

| Equipment | PPV (in/sec) | | | | |
|---|---|---|---|---|---|
| | Reference Vibration levels at 25 feet | Residences to the North at 90 Feet | Residences to the East at 10 Feet | Oakmont High School to the West at 400 Feet | Church of Christ to the Northeast at 250 Feet |
| Vibratory Roller[1] | 0.21 | 0.031 | **0.830** | 0.003 | 0.007 |
| Large Bulldozer[1] | 0.089 | 0.013 | **0.352** | 0.001 | 0.003 |
| Loaded Trucks[1] | 0.076 | 0.011 | NA | 0.001 | 0.002 |
| Jackhammer[1] | 0.035 | 0.005 | 0.138 | 0.001 | 0.001 |
| Small Bulldozer (100 Horsepower or less)[1] | 0.003 | 0.000 | 0.012 | 0.000 | 0.000 |
| Static Roller[2] | 0.05 | 0.007 | 0.198 | 0.001 | 0.002 |

Notes: NA= Not Applicable
**Bold** = Exceeds FTA 0.20 in/sec PPV vibration threshold
[1] Source: FTA 2018.
[2] Source: New Zealand Transport Agency 2012.

Implementation of Mitigation Measure NOI-2 would reduce project-related construction vibration impacts to the surrounding residential receptors to a less than significant level. Specifically, use of a static roller is estimated to generate vibration levels of approximately 0.05 in/sec PPV at a distance of 25 feet (New Zealand Transport Agency 2012). Earthwork equipment used for grading shall be limited to equipment with 100 horsepower or less.

### Mitigation Measures

NOI-2 Vibratory compaction for paving within 25 feet of any surrounding residential structure shall use a static roller in lieu of a vibratory roller. At a distance greater than 25 feet, a vibratory roller would not exceed 0.20 in/sec PPV and is allowed for use.

Grading, earthwork, and demolitions activities within 15 feet of adjacent residential structures shall be conducted with off-road equipment that is limited to 100 horsepower or less.

**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 nearest airport to the project site is Sacramento McClellan airport, approximately 8.8 miles southwest. Additionally, a private helipad for hospital transportation is approximately 2.6 miles northeast at Sutter Roseville Medical Center. The project would not expose people residing or working in the project area to excessive aircraft noise levels. Therefore, no impact would occur and no mitigation measures are necessary.

## 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 involves the development of a new District office. The proposed project is intended to consolidate its administrative functions into a central facility and would continue to serve as a location for District staff to carry out the District's administrative functions. The proposed project would not result in the creation of housing or infrastructure that would induce unplanned population growth in the area. Therefore, no impact to population and housing would occur and no mitigation measures are necessary.

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

**No Impact.** As shown on Figure 3, the project site consists of an existing school parking lot with a District office. Therefore, project development would not displace housing or people. No impact would occur, and no mitigation measures are necessary.

## 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.** Fire prevention, fire protection, and emergency medical services in the project area are provided by the Roseville Fire Department, which has eight fire stations in the city. The nearest fire station to the project site is Station 3 at 1300 Cirby Way, approximately 0.6 mile to the west. The proposed project may cause a very slight increase in demands for fire protection and emergency medical service. However, considering the existing firefighting resources available in and near the city, project impacts on fire protection and emergency services (including response times) are not expected to occur. Additionally, in the event of an emergency at the project site that required more resources than Fire Station 3 could provide, the Roseville Fire Department would direct resources to the site from other city stations nearby and, if needed, request assistance from other nearby fire departments. Therefore, impacts would be less than significant, and no mitigation measures are necessary.

# 3. Environmental Analysis

**b) Police protection?**

**Less Than Significant Impact.** Law enforcement services in the area are provided by the Roseville Police Department. The Roseville Police Department is headquartered at 1051 Junction Boulevard, 2.85 miles to the northwest. The proposed project may cause a very slight increase in demands for police services during construction due to possible trespass, theft, and/or vandalism. Active construction areas would be fenced, and any increase in demand for police would be temporary and would not require construction of new or expanded police facilities. The proposed project would not increase staff population in the district and would not result in new adverse impacts on existing police service. Additionally, in the event of an emergency at the project site that required more resources than the Roseville Police Department could provide, the Roseville Police Department would request assistance from other nearby police departments, such as the Rocklin Police Department. Therefore, impacts would be less than significant, and no mitigation measures are necessary.

**c) Schools?**

**No Impact.** School services are related to the size of the residential population, the geographic area served, and community characteristics. The proposed project would not increase the population in the attendance boundary or otherwise increase demand for school services. The proposed project would not result in changes in land uses (e.g., housing) that would result in population growth or create a greater demand for school services. Therefore, no impact would occur, and no mitigation measures are necessary.

**d) Parks?**

**No Impact.** Impacts to public parks and recreational facilities are generally caused by population or employment growth. The proposed project would not increase population or significantly increase employment. The proposed project would not result in the increased demand for additional parks and recreation services either on-site or in the surrounding area. Therefore, physical impacts to parks and recreation from increased population growth would not occur. No impacts to parks would occur and no mitigation measures are necessary.

**e) Other public facilities?**

**No Impact.** The proposed project would not result in impacts associated with the provision of other new or physically altered public facilities (e.g., libraries, hospitals, childcare, teen or senior centers). Physical impacts to public services are usually associated with population in-migration and growth, which increase the demand for public services and facilities. The proposed project is intended to consolidate its administrative functions into a central facility on the existing District property. No new population would be generated by the proposed uses; therefore, no increased demand on other public facilities is anticipated. No impacts to other public facilities would occur and no mitigation measures are necessary.

## 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?**

**No Impact.** The City of Roseville owns and manages several neighborhood parks, neighborhood/school parks, and citywide (regional) parks with a combined acreage of approximately 1,043 acres (City of Roseville 2020b). The City of Roseville has an adopted standard of nine acres of parkland per 1,000 residents and defines "parkland" to include public developed parks, recreational open space, and joint-use park-school facilities. The nine-acre standard is further divided into six acres of developed parks per 1,000 residents and three acres of open space per 1,000 residents—the same ratio specified in the Quimby Act for park land acquisition (City of Roseville 2020a). The project would not result in an increase in population. Therefore, the construction of new park space or other town recreational facilities would not be required. There would be no impact related to the physical deterioration of existing recreation parks or other recreational facilities.

**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?**

**No Impact.** The proposed project would not require the construction or expansion of off-site recreational facilities. Furthermore, the proposed project would neither increase population through construction of homes nor induce population growth that would require expanded recreational facilities; therefore, there is no impact.

## 3.17 TRANSPORTATION

Would the project:

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

**No Impact.** The proposed project would not substantially change the site's vehicular, pedestrian, or bicycle access and on-site circulation system. The existing driveway on the south side of Cirby Way would continue to provide access to the District office for vehicles, bicycles, and pedestrians.

The proposed project would result in minor modifications to the on-site circulation pattern. With the existing layout, motorists enter the District office site from the Cirby Way driveway. The existing on-site circulation pattern allows motorists to travel in a single direction around the District office building and access parking provided to the north, west, and south of the site.

Reconfiguration of the parking lot would improve on-site circulation because motorists would have multiple paths of travel and be able to navigate around newly developed landscaped islands with perpendicular parking spaces. Parking spaces in the western portion of the project site and adjacent to the proposed building would change from diagonal parking spaces to perpendicular parking spaces. Additional parking spaces would be provided in the northeastern portion of the project site where an empty grass lot currently exists. Though the

project would result in a decrease of 34 parking spaces, the total number of parking spaces could still adequately accommodate the parking demands. There would be no changes to pedestrian and circulation patterns because they would enter the District office site via the Cirby Way driveway and proceed to their destination through the parking lot. The existing sidewalks along Cirby Way and the other streets in the area would continue to be used by pedestrians.

The number of staff on-site is anticipated to increase from the existing 24 staff to an expected 52 staff. This would result in an increase in the volumes of traffic that would be generated by the District office, but it would not result in any traffic issues on the street network or impacts to the transit system.

In summary, the proposed project would not adversely affect traffic conditions on the study area street network or the internal circulation system, nor would it affect the performance of any transit or nonmotorized transportation facilities. The project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, and no mitigation measures would be required.

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

**No 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 California Environmental Quality Act (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 eliminates auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as the basis for determining significant impacts under CEQA. As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (PRC 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 new Guidelines, metrics related to "vehicle miles traveled" (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. The State provided an "opt-in period" and did not require lead agencies to apply a VMT metric until July 1, 2020. However, in January 2020, State courts stated that under PRC 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.

As stated in the "Technical Advisory on Evaluating Transportation Impacts in CEQA" (2018) by the California Office of Planning and Research, and Caltrans's "Vehicle Miles Traveled: Focused Transportation Impact Study Guide" (2020), projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact and can be screened from a CEQA VMT analysis because they fall into the small project category. It is anticipated that the District office would result in an increase of 28 staff, which would generate up to 70 net new vehicle trips per day beyond existing conditions on-site. As this is below

the CEQA VMT threshold of 110 trips per day, this project can be screened from any further CEQA VMT analysis and would not result in a significant impact relative to VMT.

It is concluded, therefore, that the project would have no VMT impacts and no mitigation measures would be required.

**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 substantially modify the on- or off-site access or circulation system. Access to the site for vehicles, bicyclists, and pedestrians would continue to occur via the existing driveway on the south side of Cirby Way. The streets, intersections, driveways, and on-site circulation system are designed to accommodate the anticipated levels of vehicular and pedestrian activity and have been accommodating District office-related traffic on a daily basis. They would continue to be compatible with the design and operation of an administration building.

As the proposed project would not result in any substantial modifications to the existing access or circulation features at the site or on the surrounding streets, there would be no impacts involving increased hazards due to a geometric design feature or incompatible uses.

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

**No Impact.** The existing access and circulation features at the site, including the driveways, on-site circulation roads, parking lots, and fire lanes, would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. The proposed project would not alter any emergency access features at the site. Emergency vehicles could easily access the new building and all other areas of the site via on-site travel corridors. The proposed project would not, therefore, result in inadequate emergency access. No impacts would occur, and no mitigation measures are necessary.

## 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.** The project site is not listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in PRC Section 5020.1(k). As discussed in Section 3.5, *Cultural Resources*, the potential to discover an unknown tribal cultural resource within the project site is unlikely given the developed nature of the site and archaeological records. If any tribal cultural resource is found during ground disturbing activities, construction will be halted, Mitigation Measure CUL-1 and Mitigation Measure TRI-1 shall be

implemented as necessary. As the property has been previously disturbed, it is not anticipated that unknown tribal cultural resources are present on-site. Impacts would be less with implementation of mitigation.

### Mitigation Measures

TRI-1 If any suspected TCRs are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. A Tribal Representative from a California Native American tribe that is traditionally and culturally affiliated with a geographic area shall be immediately notified and shall determine if the find is a TCR (PRC §21074). The Tribal Representative will make recommendations for further evaluation and treatment as necessary.

When avoidance is infeasible, preservation in place is the preferred option for mitigation of TCRs under CEQA and tribal protocols, and every effort shall be made to preserve the resources in place, including through project redesign, if feasible. Culturally appropriate treatment may be, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, or returning objects to a location within the project area where they will not be subject to future impacts. Permanent curation of TCRs will not take place unless approved in writing by the California Native American tribe that is traditionally and culturally affiliated with the project area.

The contractor shall implement any measures deemed by the CEQA lead agency to be necessary and feasible to preserve in place, avoid, or minimize impacts to the resource, including, but not limited to, facilitating the appropriate tribal treatment of the find, as necessary. Treatment that preserves or restores the cultural character and integrity of a TCR may include Tribal Monitoring, culturally appropriate recovery of cultural objects, and reburial of cultural objects or cultural soil.

Work at the discovery location cannot resume until all necessary investigation and evaluation of the discovery under the requirements of the CEQA, including AB 52, have been satisfied.

**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.** As of July 1, 2015, PRC Sections 21080.1, 21080.3.1, and 21080.3.2 require public agencies to consult with California Native American tribes recognized by the NAHC for the purpose of mitigating impacts to tribal cultural resources. This law does

not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions.

In accordance with PRC 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 for tribal cultural resources. The following tribes are on the District's notification list pursuant to AB 52:

- Shingle Springs Band of Miwok Indians
- Tsi Akim Maidu
- United Auburn Indian Community of the Auburn Rancheria
- Wilton Rancheria
- Colfax-Todds Valley Consolidated Tribe
- Nevada City Rancheria Nisenan Tribe

As of the time of the publication of this Mitigated Negative Declaration, the United Auburn Indian Community of the Auburn Rancheria is the only tribe to contact the District; no tribes requested consultation. The United Auburn Indian Community of the Auburn Rancheria provided a recommended tribal cultural resources mitigation measure which is incorporated into this IS/MND.

No evidence or readily available records exist to indicate that tribal cultural resources were identified during prior disturbance and development of the project site, and it is unlikely that any such resources would be uncovered or affected during project-related grading and construction activities. If any tribal cultural resource is found during ground disturbing activities, construction will be halted, Mitigation Measure CUL-1 and Mitigation Measure TRI-1 shall be implemented as necessary. As the property has been previously disturbed, it is not anticipated that unknown tribal cultural resources are present on-site. Impacts would be less with implementation of mitigation.

# 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 Treatment Facilities

The City of Roseville would provide potable water to the project site. The City has three sources of water supply: surface water, groundwater, and recycled water for irrigation. The City obtains its primary water supply from the Federal Central Valley Project, owned and operated by the United States Bureau of Reclamation (USBR), of which Folsom Lake is a part. This is achieved through a contract with the USBR, which ensures water from Folsom Lake in perpetuity. In addition to USBR water supplies, the City has contracts with the Placer County Water Agency and the San Juan Water District for additional water supply to the City for municipal and industrial purposes (City of Roseville 2020a). The City currently has contracts for up to 66,000 acre-feet of American River water supplies diverted from the Folsom Reservoir. The City currently has six groundwater wells. The City treats wastewater at its Dry Creek Wastewater Treatment Plan and Pleasant Grove Wastewater Treatment Plan. Recycled water is used by the City for landscape irrigation, golf course irrigation, construction uses, and to provide cooling water for the Roseville Energy Park (City of Roseville 2020b).

The project site has existing connection to the water distribution system operated by the City of Roseville. Water use at the project site includes the irrigation system; fire protection; and drinking water, restroom, and housekeeping appliances. The proposed project would serve as a location for District staff to carry out the District's administrative functions in one central facility. It would not generate an increase in District staff population or water treatment demands in the City of Roseville service area. District staff would remain in the local area and be using water that requires treatment; therefore, the overall demand for water treatment would not increase. Additionally, the City of Roseville estimates it will have sufficient water supplies to meet proposed growth for normal years; water supply deficit may occur in single dry years and some multiple dry years. However, according to the City of Roseville 2020 Urban Water Management Plan, remaining deficits will be mitigated by potable water conservation measures implemented as part of the Water Shortage Contingency Plan (City of Roseville 2022b). The proposed project would not require the relocation or construction of new or expanded water treatment facilities. Therefore, impacts would be less than significant, and no mitigation measures are necessary.

### Wastewater Treatment Facilities

The project site has existing connection to the wastewater collection and treatment system owned and operated by the City of Roseville. The proposed project would be served by this system and would not require the relocation or construction of new or expanded wastewater treatment facilities. Therefore, impacts would be less than significant, and no mitigation measures are necessary.

### Stormwater Drainage Facilities

See response to question 3.10.c.iii in Section 3.10, *Hydrology and Water Quality*. As substantiated in that section, impacts would be less than significant, and no mitigation measures are necessary.

### Electricity Facilities

Electrical needs to the project site would be provided by the Pacific Gas and Electric Company (PG&E) via existing infrastructure in the immediate area of the project site. Uses of electricity under the proposed project would include indoor lighting, office appliances, perimeter lighting, and security systems. All utility connections to the proposed project would be required to comply with applicable federal, state, and local regulations. Therefore, relocation and expansion of existing facilities and construction of new facilities would not be required. Impacts would be less than significant, and no mitigation measures are necessary.

### Natural Gas Facilities

Natural gas needs to the project site would also be provided by PG&E via existing infrastructure in the immediate area of the project site. Use of natural gas under the proposed project would include HVAC systems and hot water heaters. Total natural gas supplies available to PG&E are forecast to remain constant at 3,116 million cubic feet per day (MMCF/day) from 2020 through 2035. Total natural gas consumption in PG&E's service area is forecast to decline from 2,105 MMCF/day in 2022 to 1,737 MMCF/day in 2035 (CGEU 2022).

PG&E projects that it will have sufficient supplies to meet the demands in its service area. Therefore, the proposed project's natural gas demand is within PG&E's forecast increase, and the proposed project would not require PG&E to obtain new or expanded natural gas supplies. Impacts would be less than significant, and no mitigation measures are necessary.

### Telecommunication Facilities

Various private services, including AT&T, provide telecommunication services to the city, including the project site. No changes to telecommunication facilities would occur. Therefore, project development would not require the construction of new or expanded telecommunication facilities. Impacts would be less than significant, and no mitigation measures are necessary.

**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.** As substantiated above in Section 3.19.a, the City of Roseville will have adequate water supplies to meet water demands in its service area through 2045 during normal years; water supply deficit may occur in single dry years and some multiple dry years. However, according to the City of Roseville 2020 Urban Water Management Plan, remaining deficits will be mitigated by potable water conservation measures implemented as part of the Water Shortage Contingency Plan (City of Roseville 2022b). Additionally, the proposed project's landscaping would be required to comply with California's Model Water Efficient Landscape Ordinance, which sets landscape design standards for water efficient landscaping.

Therefore, impacts on water supplies due to project development would be less than significant and no mitigation measures are necessary.

**c) Result in a determination by the wastewater 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.** As substantiated above in Section 3.19.a, the proposed project would not generate an increase in District staff population and would not expand total treatment demands in the city. Project development would not require construction of new or expanded wastewater treatment facilities. Therefore, impacts would be less than significant, and no mitigation measures are necessary.

**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.** Solid waste is transported to the Western Placer Waste Management Authority's Western Regional Sanitary Landfill at 3195 Athens Road in unincorporated Placer County; this landfill serves the western portion of the county, including Roseville. Most of the solid waste generated in the city is first transported to the material recovery facility at the landfill. The material recovery facility separates and recovers waste products for recycling, reuse, or conversion to energy resources.

In 2019, 98.8 percent of solid waste generated in the city was disposed of at the Western Regional Sanitary Landfill (CalRecycle 2019a). The landfill is permitted to received 1,900 tons of solid waste per day and has a remaining capacity of 29,093,819 tons (CalRecycle 2019b).[7] Project operation is estimated to generate 0.007 pound per square feet per day, resulting in 185.7 pounds per day or 0.09 ton per day (Cal Recycle 2019c). The proposed project would result in a negligible increase in solid waste. There is adequate landfill capacity in the region for project-generated solid waste, and project development would not require new or expanded landfills. Therefore, impacts to solid waste would be less than significant, and no mitigation measures are necessary.

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

**Less Than Significant Impact.** The following laws and regulations govern solid waste disposal:

- **AB 939 (Chapter 1095, Statutes of 1989).** The California Integrated Waste Management Act of 1989 required each city, county, and regional agency to develop a source reduction and recycling element of an integrated waste management plan that contained specified components, including a source reduction component, a recycling component, and a composting component. With certain exceptions, the source reduction and recycling components were required to divert 50 percent of all solid waste from landfill disposal or transformation by January 1, 2000, through source reduction, recycling, and composting.

[7] A volume-to-weight conversion rate of 2,000 lbs./cubic yard (1 ton/cubic yard) for "Compacted - MSW Large Landfill with Best Management Practices" is used as per CalRecycle's 2016 volume-to-weight conversion factors.

- **AB 32 (Chapter 488, Statutes of 2006).** The California Global Warming Solutions Act established mandatory recycling as one of the measures to reduce GHG emissions and was adopted in the Scoping Plan by the California Air Resources Board.
- **AB 1327.** The California Solid Waste Reuse and Recycling Access Act of 1991 requires local agencies to adopt ordinances mandating the use of recyclable materials in development projects.

Project-related construction and operation phases would be implemented in accordance with all applicable federal, state, and local laws and regulations that govern solid waste disposal. Therefore, impacts would be less than significant and no mitigation measures are necessary.

## 3.20 WILDFIRE

If located in or near state responsibility areas or lands classified as very high FHSZs, would the project:

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

**Less Than Significant Impact.** California Government Code Chapter 6.8 directs the California Department of Forestry and Fire Protection (CAL FIRE) to identify areas of very high fire hazard severity in State Responsibility Areas (SRA). Mapping of these very high FHSZs is based on data and models of potential fuels over a 30- to 50-year time horizon and their expected fire behavior and burn probabilities, which quantify the likelihood and nature of vegetation fire exposure to buildings. SRA FHSZ maps were initially developed in the mid-1990s and are now being updated based on improved science, mapping techniques, and data. In 2008, the California Building Standards Commission adopted CBC Chapter 7A requiring new buildings in FHSZs to use ignition-resistant construction methods and materials.

The City of Roseville is in an LRA designated moderate and urban unzoned FHSZ. The project site the lands surrounding it are in an urban unzoned FHSZ in the SRA (CAL FIRE 2007). Development on the project site would be subject to compliance with the 2022 CBC. Roseville is covered under the City of Roseville Emergency Operations Plan and the City of Roseville Multi-Hazard Mitigation Plan. These plans provide guidance to effectively respond to any emergency, including wildfires. In addition, all proposed construction is required to meet minimum standards for fire safety. Implementation of these plans and policies in conjunction with compliance with the CFC would minimize the risk of loss due to wildfires.

Furthermore, 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 surroundings during construction and postconstruction. In addition, as with all projects in Roseville, conformance with the CBC and CFC would be required. Therefore, impacts are considered 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.** The topography of the site is generally flat, with development planned throughout the site. The city does not have high-speed prevailing winds, and average wind speeds are approximately 6 miles per hour during the windier part of the year, from May to September (Weather Spark 2022).

Development of the site with the proposed improvements would increase the total amount of impervious surfaces and reduce the amount of exposed vegetation that could be used as fuel on the site, though additional landscaping would be included as part of the proposed project. Therefore, the project and site conditions would not contribute to an increase in exposure to wildfire risk. Additionally, development on the project site would be subject to compliance with the CBC and under the City of Roseville Multi-Hazard Mitigation Plan, which provides guidance to effectively respond to and mitigate emergencies, including wildfires. While the project site is within an urban unzoned FHSZ, conformance with the CBC and CFC would be required. Therefore, impacts are considered 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 would require expansion of connection to utilities such as electricity and water. The project applicant is required to pay for connections and maintenance of on-site utility infrastructure. The utilities would be installed to meet service requirements. Though the project site is in an unzoned FHSZ, the construction of infrastructure improvements for the project would not directly increase fire risk, and impacts are 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 Sections 3.7 and 3.10 respectively, the project site is not within a landslide hazard area or a flood plain. Historical geographic mapping does not show any flooding or safety concerns caused by the drainage. Construction activities related to the proposed project would be subject to compliance with the CBC and would include BMPs. BMPs may include but are not limited to covering of the soil, use of a dust-inhibiting material, landscaping, use of straw and jute, hydroseeding, and grading. Therefore, with implementation of BMPs, impacts are less than significant.

## 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 substantiated in Section 3.4, *Biological Resources*, tree or vegetation removal would be required for the proposed project; therefore, the project could result in direct impacts on special-status wildlife during construction. However, compliance with Mitigation Measures BIO-1 through BIO-2 would ensure that impacts to biological resources do not occur.

Furthermore, as substantiated in Section 3.5, *Cultural Resources*, no historic resources were identified on-site and, therefore, the project site does not have the potential to eliminate important examples of California history or prehistory. As substantiated in Section 3.18, *Tribal Cultural Resources*, the project site is not listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in PRC Section 5020.1(k). Because the property has been previously disturbed, it is not anticipated that unknown tribal cultural resources are present on-site. However, compliance with Mitigation Measure CUL-1 and Mitigation Measure TRI-1 would ensure that impacts to archeological resources do not occur.

**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 issues relevant to project development are confined to the immediate project site and surrounding area. Additionally, the project site is in an area of the city where supporting utility infrastructure (e.g., water, wastewater, electricity, natural gas, and drainage) and services (e.g., solid waste collection) currently exist. Project implementation would not require the construction of new or expansion of existing utility infrastructure and services.

Furthermore, impacts related to other topical areas, such as air quality, GHG, hydrology and water quality, and traffic, would not be cumulatively considerable with development of the project in conjunction with other cumulative projects. In consideration of the preceding factors, the project's contribution to cumulative impacts would be rendered less than significant; therefore, project impacts would not be cumulatively considerable.

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

**Less Than Significant Impact.** As discussed in the respective topical sections of this Initial Study, implementation of the proposed project would not result in significant impacts in the areas of GHG, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, or wildfire, which may cause

adverse effects on human beings. Therefore, impacts related to these environmental effects were deemed to be less than significant.

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# Appendix A Air Quality, Energy, and Greenhouse Gas Emissions Technical Memorandum

# Appendices

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# AIR QUALITY, ENERGY, AND GREENHOUSE GAS EMISSIONS TECHNICAL MEMORANDUM

| | |
|---|---|
| DATE | January 13, 2023 |
| TO | Roseville Joint Union High School District |
| ADDRESS | 2 Tiger Way, Bldg. #2 Roseville, CA 95678 |
| CONTACT | Scott Davis \| Director, Facilities Development |
| FROM | Mark Teague, Principal<br>Miles Barker, Project Planner<br>Lance Park, Senior Associate I<br>Emily Parks, Project Planner |
| SUBJECT | Air Quality, Energy, and Greenhouse Gas Emissions Technical Memorandum for Proposed Roseville New District Office Project |
| PROJECT NUMBER | ROSE-04 |

PlaceWorks technical staff has prepared an air quality, greenhouse gas (GHG) emissions, and energy memorandum to support the California Environmental Quality Act (CEQA) environmental review for the demolition of the existing District office and construction of a proposed new two-story District office at 1750 Cirby Way, Roseville, California (proposed project).

## Methodology

Projected operation-related air pollutant emissions are calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1. CalEEMod compiles an emissions inventory of construction activities; area sources; mobile sources; and indirect emissions from energy use, waste disposal (annual only), and water/wastewater (annual only) use. The calculated emissions of the proposed project are compared to thresholds of significance for individual projects using the Placer County Air Pollution Control District's (PCAPCD) *2017 CEQA Handbook*.[1]

[1] Placer County Air Pollution Control District (PCAPCD), 2017. CEQA Handbook, https://www.placerair.org/1801/CEQA-Handbook, accessed November 29, 2022.

# Thresholds of Significance

## CRITERIA AIR POLLUTANTS

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in PCAPCD's *2017 CEQA Handbook* and the significance thresholds on PCAPCD's website.[2] CEQA allows the lead agency to develop and utilize their own significance thresholds in the environmental review of a proposed project. PCAPCD has established thresholds of significance for regional air quality emissions for construction and operational activities based on substantial evidence in their *2017 CEQA Handbook*, which the City is choosing to rely on to determine whether the proposed project may result in potentially significant air quality impacts.

## PAPCD Thresholds of Significance

PCAPCD has adopted regional thresholds of significance for criteria pollutants to determine a project's cumulative impact on air quality in the Sacramento Valley Air Basin (SVAB). Table 1, *PCAPCD Criteria Pollutant Thresholds*, lists the construction and operational phase thresholds that are applicable for all projects uniformly, regardless of size or scope.

**Table 1 PCAPCD Criteria Pollutant Thresholds**

| Air Pollutant | Construction Phase | Operational Phase | |
|---|---|---|---|
| | | Operational Phase Project Level | Operational Phase Cumulative Level |
| Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs) | 82 lbs/day | 55 lbs/day | 55 lbs/day |
| Nitrogen Oxides ($NO_X$) | 82 lbs/day | 55 lbs/day | 55 lbs/day |
| Particulates ($PM_{10}$) | 82 lbs/day | 82 lbs/day | 82 lbs/day |

Source: Placer County Air Pollution Control District (PCAPCD), 2017. CEQA Handbook, https://www.placerair.org/1801/CEQA-Handbook, accessed November 29, 2022.

Projects that exceed the criteria pollutant significance thresholds would cumulatively contribute to the nonattainment designation of the SVAB and would contribute to elevating health effects associated to 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 further contribute to reducing possible health effects related to criteria air pollutants.

Mass emissions in Table 1 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SVAB. Therefore, regional emissions from a single project do not usually trigger a regional health impact. PCAPCD is the primary agency responsible for ensuring the health and welfare of individuals sensitive to elevated concentrations of air quality in the SVAB. To achieve the health-based standards established by the Environmental Protection Agency (EPA), PCAPCD prepares an air quality management plan (AQMP) that details regional programs to attain the AAQS.

[2] Placer County Air Pollution Control District (PCAPCD), 2017. CEQA Handbook, https://www.placerair.org/1801/CEQA-Handbook, accessed November 29, 2022.

### CO HOT SPOTS

Areas of vehicle congestion have the potential to create pockets of carbon monoxide (CO) called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 parts per million (ppm) or the 8-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 SVAB and in the state have steadily declined.

Currently, the SVAB is designated attainment for CO under both the California AAQS and National AAQS. According to the PCAPCD, CO concentrations should be analyzed at intersections in the project vicinity if the proposed project's CO emissions from vehicle operation are more than 550 lbs/day[3] and if either of the following scenarios is true:

- level of service (LOS) would be degraded from acceptable (i.e., A, B, C, or D) to unacceptable (i.e., E or F); or
- if a project would result in the addition of traffic that would substantially worsen (delay of 10 seconds or more with project-generated traffic included) already unacceptable peak-hour LOS intersections.

If a project is identified to have potential CO impacts, the PCAPCD recommends completing a dispersion modeling analysis using CALINE-4 dispersion model to identify potential CO concentrations at the impacted streets or intersections.

## Environmental Impacts

### 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 unhealthful pollutant concentrations. The results of the air quality modeling can be found in Attachment 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 SVAB, which is managed by the PCAPCD, is designated nonattainment for $O_3$ under the California and National AAQS, attainment for $PM_{2.5}$ under the California and National AAQS, nonattainment for $PM_{10}$ under the California AAQS, and attainment for lead under the California AAQS.[4]

[3] The recommended screening criteria of 550 lbs/day is referred by the District's NSR rule's emission offset threshold for CO emissions.

[4] Placer County Air Pollution Control District (PCAPCD), 2017. CEQA Handbook, https://www.placerair.org/1801/CEQA-Handbook, accessed November 29, 2022.

The following describes project-related regional, localized, and odor impacts from operational activities from implementation of the proposed project. Would the proposed project:

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

Less Than Significant Impact. The PCAPCD in coordination with other local air districts in Sacramento area prepared and submitted the 1991 Air Quality Attainment Plan (AQAP) to demonstrate how Placer County would attain the required federal 8-hour ozone standard by 2024.[5] In accordance with the Clean Air Act, PCAPCD and other air districts in the region also prepared the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Sacramento Ozone Plan) in July 2017, which stands as the applicable air quality plan for the region, as a revision to the California State Implementation Plan (SIP). The Sacramento Ozone Plan demonstrated that the Sacramento Area would attain in 2024 and contained the required planning elements including an emission inventory, reasonable further progress (RFP) demonstration with a baseline year of 2012, transportation conformity budgets for the years 2020 and 2023, and RFP and attainment contingency provisions.

The SIP plans and control measures are based on information derived from regional growth projections based on general plans developed by Placer County to forecast future emission levels in the SVAB. As such, projects that proposed development consistent with the growth anticipated or development that is less dense that is associated with the Roseville General Plan would be consistent with the SIP. Changes in population, housing, or employment growth projections have the potential to affect PCAPD's demographic projections and therefore the assumptions in SIP. Typically, only large, regionally significant projects have the potential to affect the regional growth projections.

The project site is currently designated Public Quasi-Public (P/QP)[6] and Two-Family Residential (R-2)[7]. The land use development on the project site would be consistent with the City of Roseville Zoning Ordinance and is permitted under City approval and issuance of a site plan review. The replacement of a new District office building would not result in a substantial deviation from the existing plans since the Project would maintain office use on site.

Additionally, based on the scope and nature of the proposed project, it is anticipated to generate fewer than 1,000 jobs and would develop less than 500,000 square feet of business floor space. Thus, it would not meet the criteria for a project of statewide, regional, or areawide significance established under CEQA Guidelines Section 15206(b)(2). As demonstrated below, the regional emissions that would be generated by the operational phase of the proposed project would be less than the PCAPCD's significance thresholds. Therefore, it would not be considered by PCAPCD to be a substantial source of air pollutant emissions that would have the potential to affect the nonattainment designations in the SVAB. The proposed project would not affect the regional emissions inventory or conflict with strategies in the SIP and impacts would be *less than significant*.

[5] California Air Resources Board (CARB). 2018, October 25, 2018. 2018 Updates to the California State Implementation Plan. https://www.arb.ca.gov/planning/sip/2018sipupdate/2018update.pdf?_ga=2.19332344.1366902301.1669752473-1515111945.1627578145, accessed November 30, 2022.

[6] The public/quasi-public district is applied to land intended for education, religious assembly, governmental offices, municipal corporation yards, water treatment plants, power generating facilities (including privately owned facilities), and other publicly-owned facilities.

[7] The two-family residential district is intended to allow two dwellings per lot, either detached single-family dwellings or duplexes, and similar and related compatible uses

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?

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

## Regional Short-Term Construction Impacts

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions ($PM_{10}$ and $PM_{2.5}$) from demolition and soil-disturbing activities, such as grading and excavation. Air pollutant emissions from construction activities on site would vary daily as construction activity levels change. Construction activities associated with the proposed project would result in emissions of ROG, $NO_X$, and $PM_{10}$.

The proposed project would result in demolition debris and would require minimal soil export from the rough grading activities. A quantified analysis of the proposed project's construction emissions was conducted using the California Emissions Estimator Model (CalEEMod) Version 2022.1 based on information provided by the project applicant and equipment mix for each construction activity. The approximately 19-month construction period is assumed to begin in June 2023 and end in January 2025.

Potential construction-related air quality impacts are determined by comparing the average daily criteria air pollutants emissions generated by the project-related construction activities to the PCAPCD significance thresholds in Table 2, *Average Daily Construction-Related Criteria Air Pollutant Emissions*. Average daily emissions are based on the annual construction emissions divided by the total number of active construction days. As shown in Table 2, criteria air pollutant emissions from construction equipment exhaust would not exceed the PCAPCD significance thresholds and impacts from project-related construction activities to the regional air quality would be *less than significant.*

**Table 2 Average Daily Construction-Related Criteria Air Pollutant Emissions**

| | Average Daily Emissions (lbs/day)[a,b] | | |
|---|---|---|---|
| | **ROG** | **$NO_X$** | **$PM_{10}$** |
| Average Daily Emissions[c] | 0.47 | 3.42 | 0.18 |
| **PCAPCD Construction Thresholds** | **82** | **82** | **82** |
| **Exceeds Average Daily Threshold?** | No | No | No |

Source: Attachment A, CalEEMod Version 2022.1. Highest winter or summer emissions are reported.
Notes: Reactive Organic Gases = ROG; Coarse Inhalable Particulate Matter = $PM_{10}$; Fine Inhalable Particulate Matter = $PM_{2.5}$
a. Construction phasing and equipment mix are based on the preliminary information provided by the project applicant. 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 Air Quality Management District of construction equipment and phasing for comparable projects.
b. Includes implementation of BMPs for fugitive dust control required by PCAPCD as mitigation, 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.
c. Average daily emissions are based on the total construction emissions divided by the total number of active construction days. The total number of construction days is estimated to be about 423.

## Regional Long-Term Operational Impacts

Operational emissions were estimated using CalEEMod (version 2022.1) and are based on the information provided by the client. Operational activities associated with the proposed project would result in the generation of criteria air pollutant emissions from mobile sources, area sources (e.g., landscaping equipment, architectural coating), and energy use (i.e., natural gas used for heating and cooking). In

addition, existing operations on-site generate criteria pollutant emissions from mobile sources, area sources, and energy sources principally associated with the operation of the existing district office and vehicle trips generated by the 24 current on-site employees. These existing on-site emissions would be foregone with the implementation of the proposed project, and PCAPCD recommends that existing emissions be subtracted from proposed project emissions before being compared against PCAPCD significance thresholds.

The proposed school district office, which would accommodate an anticipated 52 employees upon full buildout, was assumed to generate 2.5 average daily trips (ADT) per employee to account for employees traveling to and from the project site daily and any additional incidental trips. As such, the existing operations with 24 employees currently generate up to 60 ADT and the proposed project is anticipated to generate a total 130 ADT, resulting in a net increase of up to 70 ADT. It should be noted that this analysis represents a conservative assessment of project emissions during operation because it does not consider the foregone emissions generated from existing operations on-site. As such, criteria pollutant emissions from full operation of the proposed project without subtracting existing emissions are included herein for a conservative assessment of the proposed project and are compared against PCAPCD significance thresholds.

As shown in Table 3, *Average Daily Regional Operation Emissions*, the maximum daily operation emissions would be less than their respective PCAPCD significance threshold values. Therefore, the operation of the proposed project would not contribute to the nonattainment designations of the SVAB, and regional air quality impacts are *less than significant*.

**Table 3 Average Daily Regional Operation Emissions**

| | Average Daily Emissions (lbs/day) | | |
|---|---|---|---|
| | **ROG** | **$NO_X$** | **$PM_{10}$** |
| Average Daily Emissions | 1.07 | 0.43 | 0.02 |
| **PCAPCD Operational Project-Level Thresholds** | **55** | **55** | **82** |
| **Exceeds Average Daily Threshold?** | No | No | No |

Source: Attachment A, CalEEMod Version 2022.1. Highest winter or summer emissions are reported.
Notes: lbs: pounds.

### 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 Impacts

Future construction under the proposed project would temporarily elevate concentrations of TACs and DPM in the vicinity of sensitive land uses during construction activities. The nearest sensitive receptor to the project site is the single-family residence approximately 50 feet to the east. However, construction emissions associated with the proposed project would stay localized in the proposed project's vicinity and be temporary in nature. Moreover, the proposed project would involve the demolition of a 7,376-square-foot building and construction of a 26,526-square foot building in its place. Because construction of the proposed project would be temporary and involve a relatively small amount of demolition and

construction, it is anticipated that the construction-related health risk impacts associated with the proposed project would not exceed acceptable PCAPCD's significance levels and impacts would be *less than significant.*

## Operation Health Risk

People exposed to toxic air contaminants (TAC) at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. To reduce exposure to TACs, CARB developed a handbook for 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.[8] This document was developed as a guide and as a tool for assessing the compatibility and associated health risk when placing sensitive receptors near existing pollution sources.

Types of land uses that typically generate substantial quantities of criteria air pollutants and TACs include industrial (stationary sources), manufacturing, and warehousing (truck idling) land uses that could generate a substantial number of trucks. CARB recommends avoiding siting new sensitive land uses within "1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transportation refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week)" to avoid exposing sensitive receptors to substantial concentration of air pollutants.[9] PCAPCD additionally recommends that a site-specific health risk analysis involving air dispersion modeling be considered for projects that are anticipated to generate TACs, such as goods distribution centers, refineries, power generation facilities, chrome platers, dry cleaners, and gasoline dispensing facilities.

The types of major air pollutant emissions sources listed by CARB and PCAPCD are not included as part of the proposed project. The proposed project would not include stationary sources that emit TACs and would not generate a significant amount of daily heavy-duty truck trips (a source of diesel particulate matter [DPM]) to warrant a more detailed review. Therefore, the proposed project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during operation, and impacts would be *less than significant.*

## CO Hot spots

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 parts per million (ppm) or the 8-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 AAQS is typically demonstrated through an analysis of localized CO concentrations, typically produced at intersections where vehicles queue for longer periods and are subject to reduced speeds. Currently, the SVAB is designated attainment for CO under both the California AAQS and National AAQS. As stated previously, According to the PCAPCD, CO concentrations should be analyzed at intersections in the project vicinity if the project's CO emissions from vehicle operation are more than 550 lbs/day and if the level of service (LOS) would be degraded from acceptable (i.e., A, B, C, or D) to unacceptable (i.e., E or F); or a project would result in the addition of traffic that would

[8] California Air Resources Board (CARB), 2005. Air Quality and Land Use Handbook: A Community Health Perspective, https://sfmohcd.org/sites/default/files/20%20-%20CARB%2C%20Air%20Quality%20and%20Land%20Use%20Handbook%202005.pdf, accessed December 14, 2022.

[9] California Air Resources Board (CARB), 2005. Air Quality and Land Use Handbook: A Community Health Perspective, https://sfmohcd.org/sites/default/files/20%20-%20CARB%2C%20Air%20Quality%20and%20Land%20Use%20Handbook%202005.pdf, accessed December 14, 2022.

substantially worsen (delay of 10 seconds or more with project-generated traffic included) already unacceptable peak-hour LOS intersections.

As shown in Table 3, the average daily operational emissions would be lower than PCAPCD's operational thresholds and the average daily mobile-operational emissions would be 3.15 lbs/day, which is far less than 550 lbs/day criteria. Furthermore, the proposed project would not result in an increase in staff within the District and would relocate staff from other locations to the new proposed District office. Therefore, the operational-mobile emissions associated with the 52 employees is a conservative estimate since the land use type would remain the same and it is speculative that existing operations emissions would be redistributed to the new project site. As such, operation of the proposed project would not generate CO emissions in high enough quantities to result in a CO hot spot at nearby intersections. This impact 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 PCAPCD Rule 205, *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 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. Proposed project operations would involve the development of a new office building and would not create objectionable odors to the public. Additionally, 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 are not expected to affect a substantial number of people. Therefore, overall, odor impacts would be *less than significant*.

## GREENHOUSE GAS EMISSIONS

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. 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;[10]
3. Whether the project would be considered to result in wasteful, inefficient, or unnecessary energy consumption;
4. Whether the project would conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

### Placer County Air Pollution Control District

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, PCAPCD adopted GHG significance thresholds that include the following three components: bright-line thresholds of 10,000 $MTCO_2e$ per year, efficiency matrix for residential and non-residential development, and de minimis level for the operational phase of 1,100 $MTCO_2e$ per year.[11] Projects that generate GHG emissions exceeding 10,000 $MTCO_2e$ per year (either the construction or operational phase) or exceeding 1,100 $MTCO_2e$ per year for operational phase would be deemed to have a cumulatively considerable contribution to global climate change. However, a project with GHG operational emissions between 1,100 MT and 10,000 $MTCO_2e$ per year can still be found less than cumulatively considerable when the results of the project's related efficiency analysis meets one of conditions in the efficiency matrix for that applicable land use setting and land use type.

Alternatively, local jurisdictions in Placer County may develop their own climate action plan or greenhouse gas reduction plan that meets all the criteria stated in the CEQA Guidelines Section 15183.5 (b). A consistency analysis with a local qualified plan can be used to determine the project's GHG impact in lieu of applying the PCAPCD's GHG significance thresholds and to determine cumulative GHG impacts. The City does not have a local qualified GHG plan to complete this stream-lined analysis and so PCAPCD requires an assessment of GHG emissions.

For purposes of this analysis, the bright-line thresholds of 10,000 $MTCO_2e$ per year, efficiency matrix of 26.5 $MTCO_2e$ per 1,000 square feet (for non-residential and urban development), and de minimis level for the operational phase of 1,100 $MTCO_2e$ per year is used as the significance thresholds for this proposed project. Therefore, if the project construction- and operation-phase emissions exceed the above thresholds then GHG emissions would be considered to substantially and cumulatively contribute to statewide GHG emissions in the absence of reduction measures.

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[10] The Governor's Office of Planning and Research recommendations include a requirement that such a plan 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.

[11] Placer County Air Pollution Control District (PCAPCD), 2017. CEQA Handbook, https://www.placerair.org/1801/CEQA-Handbook, accessed November 29, 2022.

## Human Activities Contributing to Climate Change

Human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as greenhouse gases (GHGs), 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 (IPCC 2001).[12] The major GHGs applicable to the proposed project 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.

Information on manufacture 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.[13] Black carbon emissions are not included in the GHG analysis because the California Air Resources Board (CARB) does not include this short-lived climate pollutant in the state's Senate Bill 32 (SB 32) inventory but treats it separately.[14]

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[12] 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.

[13] 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 (California Natural Resources Agency (CNRA). 2018, August. California's Fourth Climate Change Assessment. Statewide Summary Report. https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf). Because the amount of materials consumed during the operation or construction of the 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 (Governor's Office of Planning and Research (OPR). 2008, June. CEQA and Climate Change: Addressing Climate Change through CEQA Review. Technical Advisory. https://opr.ca.gov/docs/june08-ceqa.pdf).

[14] 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. The share of black carbon emissions from transportation is dropping rapidly and is expected to continue to do so between now and 2030 as a result of California's air quality programs. The remaining black carbon emissions will come largely from woodstoves/fireplaces, off-road applications, and industrial/commercial combustion (California Air Resources Board (CARB), 2022. GHG Short-Lived Climate Pollutant Inventory. https://ww2.arb.ca.gov/ghg-slcp-inventory, accessed December 1, 2022). However, state and national GHG

## ENERGY

The methodology employed to determine whether a proposed project would result in wasteful, inefficient, or unnecessary consumption of energy resources follows the guidance provided in Appendix F of the CEQA Guidelines as well as the analytical precedent set by *League to Save Lake Tahoe Mountain etc. v. County of Placer* (2022) (75 Cal.App.5th 63, 164-168).

According to Appendix F of the CEQA Guidelines, the goal of conserving energy is translated to include decreasing overall per capita energy consumption; decreasing reliance on fossil fuels such as coal, natural gas, and oil; and increasing reliance on renewable energy sources. In *League to Save Lake Tahoe Mountain etc. v. County of Placer* (2022) (75 Cal.App.5th 63, 164-168), the Appellate Court concluded that the analysis of wasteful, inefficient, and unnecessary energy consumption was not adequate because it did not consider whether additional renewable energy features could be added to the project.

The proposed project would be considered to result in a potentially significant impact if it would result in wasteful, inefficient, or unnecessary consumption of energy resources. Considering the guidance provided by Appendix F of the CEQA Guidelines and the Appellate Court decision in *League to Save Lake Tahoe Mountain etc. v. County of Placer* (2022) (75 Cal.App.5th 63, 164-168), the proposed project would be considered to result in wasteful, inefficient, or unnecessary consumption of energy resources if it would conflict with any of the following energy conservation goals:

- Decrease overall per capita energy consumption.
- Decrease reliance on fossil fuels such as coal, natural gas, or oil.
- Increase reliance on renewable energy sources.

Would the proposed 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 a very large one, does not generate enough GHG emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact. As stated previously, PCAPCD adopted a de minimis bright-line threshold for the operational phase of 1,100 $MTCO_2e$ per year. Therefore, if the proposed project's construction- and operation-phase GHG emissions exceed the above thresholds, then GHG emissions would be considered to substantially and cumulatively contribute to statewide GHG emissions in the absence of reduction measures.

### Construction-phase GHG Emissions

The proposed project would generate GHG emissions during construction activities primarily due to the use of construction equipment—largely diesel powered—and construction workers and haul trucks traveling to and from the project site. As the PCAPCD does not explicitly have a significance threshold for construction GHG emissions, the proposed project's construction GHG emissions were quantified using CalEEMod v2022.1, consistent with the modeling assumptions utilized in the Air Quality analysis and were amortized

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inventories do not 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.

over the expected lifetime of the project (30 years) and added to the operational GHG emissions. Project-related construction-phase GHG emissions are shown in Table 4, *Project-Related Construction GHG Emissions.* As shown in Table 4, the proposed project would generate a total 328 $MTCO_2e$ over the course of the 19-month construction schedule. Over an assumed 30-year lifetime of the proposed project, construction GHG emissions would be an estimated 11 $MTCO_2e$ per year and are added to the proposed project's operational GHG emissions in Table 5.

**Table 4 Project-Related Construction GHG Emissions**

| Year | Total $MTCO_2e$/Year | Percentage of Total Emissions |
|---|---|---|
| 2023 | 158 | 48% |
| 2024 | 157 | 48% |
| 2025 | 13 | 4% |
| **Total Construction** | 328 | 100% |
| Amortized over 30 years | 11 $MTCO_2e$ | - |

Source: CalEEMod, Version 2022.1.
Notes: MT = metric tons; $MTCO_2e$ = metric ton of carbon dioxide equivalent

## Operational-phase GHG Emissions

Project-related operation-phase GHG emissions are shown in Table 5, *Project-Related Operation GHG Emissions.* Implementation of the proposed project would result in a new office building and would generate up to 130 weekday ADT. Operation of the proposed project would also result in water demand, generation of wastewater and solid waste, area sources (e.g., consumer cleaning products), and energy usage (i.e., natural gas and electricity). As noted in the Air Quality analysis, this analysis considers the full operation of the proposed project and conservatively does not subtract emissions from existing on-site building operations or vehicle trips before comparing against PCAPCD significance thresholds. As shown in Table 5, operation of the proposed project would not generate annual emissions that exceed the PCAPCD's de minims level for operational phase of 1,100 metric $MTCO_2e$ per year (PCAPCD 2017). Therefore, the proposed project's cumulative contribution to GHG emissions would be *less than significant* and no further analysis is required.

**Table 5 Project-Related Operation GHG Emissions**

| Source | GHG Emissions ($MTCO_2e$/Year) | Percentage of Total Emissions |
|---|---|---|
| Mobile | 98 | 36% |
| Area | <1 | <1% |
| Energy | 150 | 55% |
| Water | 5 | 2% |
| Solid Waste | 8 | 3% |
| Refrigerants | <1 | <1% |
| Amortized Construction Emissions | 11 | 4% |
| **Total** | 272 | 100% |
| PCAPCD De Minimis Level for operational phase | 1,100 $MTCO_2e$/Yr | NA |
| **Exceeds Threshold?** | **No** | **NA** |

Source: Attachment A, CalEEMod, Version 2022.1.

**Table 5 Project-Related Operation GHG Emissions**

| Source | GHG Emissions ($MTCO_2e$/Year) | Percentage of Total Emissions |
|---|---|---|

Notes: MT = metric tons; $MTCO_2e$ = metric ton of carbon dioxide equivalent

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 Placer County Transportation Planning Agency (PCTPA) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). A consistency analysis with these plans is presented below.

## CARB Scoping Plan

CARB adopted the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on November 16, 2022, which lays out a path to achieve carbon neutrality by 2045 or earlier and to reduce the State's anthropogenic GHG emissions (CARB 2022c). The Scoping Plan was updated to address the carbon neutrality goals of EO B-55-18 and the ambitious GHG reduction target of 85 percent below 1990 levels by 2045 as directed by AB 1279.

The CARB Scoping Plan is applicable to state agencies but is not directly applicable to cities/counties and individual projects (i.e., the Scoping Plan does not require the City to adopt policies, programs, or regulations to reduce GHG emissions). However, new regulations adopted by the state agencies outlined in the Scoping Plan result in GHG emissions reductions at the local level. As a result, local jurisdictions benefit from reductions in transportation emissions rates, increases in water efficiency in the building and landscape codes, and other statewide actions that affect a local jurisdiction's emissions inventory from the top down. Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard (LCFS) and changes in the corporate average fuel economy standards (e.g., Pavley I and Pavley California Advanced Clean Cars program).

The CARB Scoping Plan also outlines three distinct approaches that lead agencies may consider for evaluating alignment of proposed land use development projects (residential or mixed-use residential) with State's climate goals, and therefore may have a less than significant impact on GHG emissions. The first approach is to examine whether the project includes key project attributes that reduce operational GHG emissions while simultaneously advancing fair housing. The second approach to project-level alignment with State climate goals is net zero GHG emissions, especially for new residential development. 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 2022c).

The proposed project would adhere to the key project attributes, programs, and regulations identified by the Scoping Plan and implemented by state, regional, and local agencies to achieve the statewide GHG reduction goals of AB 32, SB 32, and AB 1279. Future development projects would be required to comply with these state GHG emissions reduction measures because they are statewide strategies. For example, the proposed project and new proposed buildings would meet the latest applicable CALGreen and Building Energy Efficiency Standards in effect at the time when applying for building permits. Therefore, the proposed project's GHG emissions would be reduced from compliance with statewide measures that have

been adopted since AB 32, SB 32, and AB 1279 were adopted and would not obstruct implementation of the CARB Scoping Plan. Therefore, impacts would be *less than significant*.

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

PCTPA adopted the Final RTP 2040 RTP in September 2019 to document the policy direction, actions, and funding recommendations to meet the Placer County's transportation systems over the next twenty years (PCTPA 2019). The 2040 RTP was incorporated into the 6-county Metropolitan Transportation Plan (MTP) developed by the Sacramento Area Council of Government's (SACOG). While the 2040 RTP focuses on Placer County, the MTP plans for transportation investments across the 6-county Sacramento region.

The 2040 RTP identifies new growth areas to accommodate jobs and housing that will balance well with the land use and transportation planning within the County. This long-range planning document contains ten goals, each with supporting policies and objectives, to address the County's traffic congestion, mobility needs, and maintenance of existing transportation infrastructure. Some of the overarching goals in the 2040 RTP is to maintain countywide roadway systems, provide regionally and locally coordinated transit service that connects residential areas with employment centers, improve passenger rail service, promote aviation services that complement the countywide transportation system, provide safe and efficient movements of goods throughout the County, and to promote a convenient non-motorized transportation system (PCTPA 2019). The 2040 RTP transportation projects help more efficiently distribute population, housing, and employment growth, and forecast development is generally consistent with regional-level general plan data to promote active transportation and reduce GHG emissions. The projected regional development, when integrated with the proposed regional transportation network in the 2040 RTP, would reduce GHG emissions related to vehicular travel and improve air quality.

The 2040 RTP does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency for governments and developers. As stated previously, implementation of the proposed project would not result in an increase in staff within the District and would relocate staff from other locations to the new proposed District office. As such, the proposed project is expected to result in a net neutral effect on existing vehicle trip generation within the District. The proposed project would not be considered a regionally significant project and would not directly induce substantial population growth. Therefore, the proposed project would not interfere with PCTPA's ability to implement the regional strategies in the 2040 RTP, and impacts would be *less than significant*.

c) 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. Construction activities use energy from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew and vendors. The operation of the proposed District office building would use energy for cooling, heating, lighting, and landscape equipment, and for vehicle trips to and from the proposed building. As previously discussed, the proposed project would result in an increase of 28 staff, which would generate up to 70 net new vehicle trips per day beyond existing conditions on-site.

### Short-Term Construction Impacts

#### *Electrical Energy*

Construction of the proposed project would require energy use to power the construction equipment. The energy use would vary during different phases of construction—the majority of construction equipment

during demolition and grading would be gas powered or diesel powered, and the later construction phases would require electric-powered equipment for interior construction and architectural coatings. However, 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. The electrical energy would be supplied by Roseville Electric and available for use during construction from existing power lines and connections, precluding the use of less efficient generators. All construction equipment would cease operating upon completion of project construction.

### *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.

### *Transportation Energy*

Transportation energy (i.e., diesel fuel, gasoline, and or electric) used during construction would come from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction employee vehicles that would use diesel fuel and/or gasoline. It is anticipated that the majority of off-road construction equipment, such as those used during site preparation and grading, would be gas or diesel powered.

Construction activities would be subject to applicable State regulations such as anti-idling measures and limits on duration of activities, thereby reducing energy consumption. For example, to limit wasteful and unnecessary energy consumption to reduce the cost of operating equipment, the construction contractors would reasonably be expected to minimize nonessential idling of construction equipment during construction in accordance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9, which limits nonessential idling of diesel-powered off-road equipment to five minutes.

In general, there are no unusual characteristics that would directly or indirectly cause construction activities to be any less efficient than would occur elsewhere (restrictions on equipment, labor, types of activities, etc.). Therefore, project-related construction activities would not result in wasteful or unnecessary electricity demands, and impacts would be *less than significant*.

## Long-Term Operation Impacts

Operation of the proposed project would create higher demands for transportation energy use, natural gas and electricity demand. Energy use from operation of the proposed project would be from building heating, cooling, and ventilation; water heating; operation of electrical systems, use of on-site equipment and appliances; and indoor, outdoor, perimeter, and parking lot lighting. Energy resources consumed by operation of the proposed project were quantified and are presented in Table 6.

**Table 6 Project Annual Electricity Consumption**

| Use Type | Annual Energy Consumption |
|---|---|
| Building – Electricity[1] | 540,759 |
| Parking Lot – Electricity[1] | 49,843 |
| Building – Natural Gas[2] | 840,379 |
| Transportation – Electricity[3] | 6,150 |
| Transportation – Natural Gas[3] | <1 |

**Table 6 Project Annual Electricity Consumption**

| Use Type | Annual Energy Consumption |
|---|---|
| Transportation – Diesel[3] | 222 |
| Transportation – Gasoline[3] | 10,849 |

Source: CalEEMod, Version 2022.1.

Notes:

[1] Energy resource is expressed in kilowatt-hours (kWh/year).

[2] Energy resource is expressed in British thermal units (kBTU/year).

[3] Diesel, compressed natural gas (CNG), and gasoline fuels are expressed in gallons. Electric vehicles are expressed in kilowatt-hours (kWh).

### *Electrical Energy*

At minimum, the proposed project would meet the latest Building Energy Efficiency Standards and CALGreen standards. As described in Section 1.3.6, *Green Building Standards*, the proposed project would also include mandatory standards from Divisions 5.1 (Planning and Design), 5.2 (Energy Efficiency), 5.3 (Water Efficiency and Conservation), 5.4 (Material Conservation and Resource Efficiency), and 5.5 (Environmental Quality) of CAlGreen. For example, the proposed project is required to implement the City's Water Efficient Landscape Ordinance, which would reduce the amount of water necessary for landscape irrigation. As shown in Table 6, *Project Annual Electricity Consumption*, implementation of the proposed District office building would result in an increase of 540,759 kilowatt hours of electricity use per year. The new building would be designed to be more energy-efficient compared to the existing office building and greater proportions of electricity consumed by the proposed building would be sourced from renewable energy sources as the State progresses toward meeting SB 100. As such, the proposed project is anticipated to decrease overall per capita energy consumption and reliance on fossil fuels from implementation of greater energy efficiencies in building design and materials. In addition, the proposed project would increase reliance on renewable energy sources by installing rooftop solar, as required by Title 24, Part 6, Subchapter 11, Section 140.10(a). Overall, the new building constructed to the standards identified above would not result in wasteful, inefficient, or unnecessary consumption of electricity.

### *Natural Gas Energy*

As shown in Table 6, the new District office building would contain and increase the demand of natural gas for heating by 840,379 British thermal units. However, this is a conservative estimate as the existing office building also requires natural gas demand. As mentioned previously, the proposed project would be built to meet the latest Building Energy Efficiency Standards, meet the CALGreen requirements, and be designed to have greater energy efficiency than the existing office building. The new energy efficiency building standards would result in a decrease in per capita natural gas consumption for space and water heating. In addition, newly constructed office buildings would be required to comply with Title 24, Part 6, Subchapter 11, Section 140.10(a) of the 2022 California Building Code to include PV system meeting the minimum requirements specified by calculations contained in the CBSC. As such, the proposed project is anticipated to decrease reliance on fossil fuels from implementation of greater energy efficiencies in building design and materials. Overall, the new building constructed to the standards identified above would not result in wasteful, inefficient, or unnecessary consumption of natural gas.

### *Transportation Energy*

The proposed project would consume transportation energy during operations from the use of motor vehicles. The project-related VMT would primarily come from the employees, staff, and visitors driving to

and from the new District office building. The proposed project is expected to generate up to 70 net new ADT on a typical weekday associated with the net increase of 28 staff compared to existing conditions. However, the proposed project would not result in an increase in staff within the District since staff from other locations would relocate to the new District office. Therefore, overall VMT is not expected to increase from existing conditions.

The fuel efficiency of vehicles during the buildout year of 2025 would on average improve compared to vehicle fuel efficiencies experienced under existing conditions, thereby resulting in a lower per capita fuel consumption in 2025 assuming travel distances, travel modes, and trip rates remain the same. The improvement in fuel efficiency would be attributable to regulatory compliance (e.g., CAFE standards), resulting in new cars that are more fuel efficient and the attrition of older, less fuel-efficient vehicles. Additionally, CARB approved the new Advanced Clean Cars II standards in 2022 that will ensure all new passenger cars, trucks and SUVs sold in the state will be zero-emitting by 2035.[15] The Advanced Clean Cars II standards will amend the Zero-Emission Vehicle Regulation to require an increase in zero-emission vehicles and amends the Low-Emission Vehicle Regulations to include more stringent standards for gasoline cars and heavier passenger trucks to continue to reduce smog-forming emissions. The CAFE standards are not directly applicable to residents or land use development projects, but to car manufacturers. Therefore, compliance with the CAFE standards by car manufacturers and the new Advanced Clean Cars II standards would ensure that vehicles produced in future years would have greater fuel efficiency.

The reconfiguration of the parking lot would also improve vehicle circulation and pedestrian safety by adding new parking spaces in the northeastern portion of the project site. In addition, there is one designated crosswalk near the school property and the proposed project would not conflict with any of the existing circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Overall, it is expected that operation-related fuel usage associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than similar development projects. Accordingly, impacts would be *less than significant*, and no mitigation measures would be required.

### d) Would the project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Less Than Significant Impact. As discussed in criterion (b) of Greenhouse Gas Emissions, the proposed project would not conflict with the current CARB 2022 Climate Change Scoping Plan and the 2040 RTP, all which involve planning for use of renewable energy planning and energy efficiency standards. Additionally, the proposed project would adhere to the applicable General Plan policies related to energy conservation and would be built to the current Building and Energy Efficiency Standards of the California Public Resources Code, Title 24, Part 6. As stated before, the proposed project would not conflict with or obstruct an applicable plan for renewable or energy efficiency. Accordingly, impacts would be *less than significant*, and no mitigation measures would be required.

[15] California Air Resources Board (CARB). 2022, August 25. Proposed Advanced Clean Cars II Regulations: All New Passenger Vehicles Sold in California to be Zero Emissions by 2035. https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii.

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# Attachment A:
# Air Quality, Greenhouse Gas, and Energy Supporting Documentation

# Air Quality and Greenhouse Gas Background and Modeling Data

## AIR QUALITY

### Air Quality Regulations

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 (AAQS) promulgated at the local, state, and federal levels. The project site is in the Sacramento Valley Air Basin (SVAB) and is subject to the rules and regulations imposed by the Placer County Air Pollution Control District (PCAPCD), as well as the California AAQS adopted by the California Air Resources board (CARB), and national AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below. The discussion also identifies the natural factors in the air basin that affect air pollution.

#### 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] | Annual Arithmetic Mean | 12 µg/m$^3$ | 12 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 2016.
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.

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

## 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 SVAB. 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 (EPA 2022a).

**Volatile Organic Compounds (VOC)** are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of ROCs include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by VOCs, but rather by reactions of VOCs to form secondary pollutants such as $O_3$. There are no ambient air quality standards established for VOCs. However, because they contribute to the formation of ozone ($O_3$), PCAPCD has established a significance threshold for this pollutant (PCAPCD 2017).

**Nitrogen Oxides ($NO_x$)** are a byproduct of fuel combustion and contribute to the formation of $O_3$, $PM_{10}$, and $PM_{2.5}$. The two major forms of $NO_X$ are nitric oxide (NO) and nitrogen dioxide ($NO_2$). The principal form of $NO_2$ produced by combustion is NO, but NO reacts with oxygen to form $NO_2$, creating the mixture of NO and $NO_2$ commonly called $NO_X$. $NO_2$ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, $NO_2$ is only potentially irritating. There is some indication of a relationship between $NO_2$ and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 part per million (ppm). $NO_2$ absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure (EPA 2022a).

**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 (EPA 2022a).

**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 the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind action on arid landscapes also contributes substantially to local particulate loading (i.e., fugitive dust). 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 (EPA 2022a).

The US Environmental Protection Agency's (EPA) 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 concentrations that extend well below those allowed by the current $PM_{10}$ standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms (EPA 2022a). There has been emerging evidence that even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.1 millionths of a meter or <0.000004 inch), known as ultrafine particulates (UFPs), have human health implications, because UFPs toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (EPA 2022a). However, the EPA or CARB have yet to adopt AAQS to regulate these particulates. Diesel particulate matter (DPM) is classified by the CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment,[1] environmental damage,[2] and damage[3] (EPA 2022a).

**Ozone ($O_3$)** is commonly referred to as "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 the presence of 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 the formation of this pollutant. $O_3$ 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 (EPA 2022a).

**Lead (Pb)** is a metal found naturally in the environment as well as in manufactured products.

The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phasing out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest

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

[2] 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.

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

levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Because emissions of lead are found only in projects that are permitted by the PCAPCD, lead is not an air quality of concern for the proposed project.

## 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 PCAPCD is the agency responsible for improving air quality in the SVAB and ensuring that the National and California AAQS are attained and maintained. Portions of Placer County are within the Sacramento federal nonattainment area for ozone and $PM_{2.5}$ (PCAPCD 2017). The federal Clean Air Act (CAA) requires plans to identify how nonattainment areas will attain the NAAQS by the attainment date and EPA reviews the air quality plans to ensure that they are consistent with the requirements of the CAA.

Consequently, the PCAPCD in coordination with other local air districts prepared and submitted the *1991 Air Quality Attainment Plan* (AQAP) to demonstrate how Placer County would attain the required federal 8-hour ozone standard by 2024 (CARB 2018). In accordance with the CAA, PCAPCD and other air districts in the region also prepared the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (Sacramento Ozone Plan) in July 2017, which stands as the applicable air quality plan for the region, as a revision to the California State Implementation Plan (SIP). The PCAPCD and the other air districts of the Sacramento region also prepared a *$PM_{2.5}$ Maintenance Plan and Redesignation Request* (2013) to address how the region attain the 24-hour $PM_{2.5}$ standard.

The SIP plans and control measures are based on information derived from regional growth projections based on general plans developed by Placer County to forecast future emission levels in the SVAB. As such, projects that proposed development consistent with the growth anticipated or development that is less dense that is

associated with the Roseville General Plan would be consistent with the SIP. Changes in population, housing, or employment growth projections have the potential to affect PCAPD's demographic projections and therefore the assumptions in SIP. Typically, only large, regionally significant projects have the potential to affect the regional growth projections.

### Ozone Attainment Plan

The *Sacramento Area Regional Ozone Attainment Plan* (1994) is the current federal ozone plan (SIP) for the PCAPCD and sets out stationary source control programs and statewide mobile source control programs for attainment of the 1-hour ozone standard. The districts of the Sacramento Region have also prepared the *Sacramento Regional 8-Hour Ozone Milestone Report* (2011), which shows how existing control strategies have provided emission reductions needed to meet the federal CAA requirements toward attainment of the 1997 8-hour NAAQS.

The USEPA's June 2005 revocation of the 1-hour ozone standard and enacting the 8-hour ozone standard required the Sacramento air districts and CARB to prepare a new attainment demonstration SIP. Consequently, the Sacramento ozone planning region adopted the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* to address how the region would attain the 1997 8-hour standard. The Sacramento Ozone Plan demonstrated that the Sacramento Area would attain in 2024 and contained the required planning elements including an emission inventory, reasonable further progress (RFP) demonstration with a baseline year of 2012, transportation conformity budgets for the years 2020 and 2023, and RFP and attainment contingency provisions.

### Particulate Matter Planning

In order to show attainment of the 24-hour $PM_{2.5}$ standard, an area must demonstrate that it has met the standard during three consecutive years. The Sacramento region was able to show that the standard had been achieved during the 2009-2011 period. The PCAPCD and the other air districts of the Sacramento region subsequently prepared a *$PM_{2.5}$ Maintenance Plan and Redesignation Request* (2013) to address how the region attain the 24-hour $PM_{2.5}$ standard. The plan was submitted to CARB, but before it could be forwarded to USEPA, there were some $PM_{2.5}$ exceedances in late 2012 that postponed the submittal of the plan. However, on May 10, 2017, USEPA found that the area attained the 2006 24-hour $PM_{2.5}$ NAAQS by the attainment date of December 31, 2015 (82 Federal Register 21711). Therefore, the *$PM_{2.5}$ Maintenance Plan and Redesignation Request* will be updated and submitted in the future based on the clean data finding made by the EPA. The particulate matter planning region includes all of Sacramento County, the eastern portion of Yolo County, the western portions of El Dorado and Placer counties and the northeast portion of Solano County.

## 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

California is divided geographically into air basins for the purpose of managing the air resources of the State on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The State is divided into 15 air basins. As described above, the project is in the SVAB. The discussion below identifies the natural factors in the SVAB that affect air pollution. Air pollutants of concern are criteria air pollutants and TACs. Federal, State, and local air districts have adopted laws and regulations intended to control and improve air quality.

### Sacramento Valley Air Basin

Placer County is located in northeastern California and covers approximately 1,500 square miles of diverse geography with elevations from 45 to over 6,000 feet between Sacramento County and the Nevada State border. The western part of Placer County is located within the SVAB, which is bounded by the North Coast Ranges on the west and Northern Sierra Nevada Mountains on the east. The intervening terrain is relatively flat. (PCAPCD 2017). The project site lies in the SVAB, which encompasses eleven counties including all of Shasta, Tehama, Glenn, Colusa, Butte, Sutter, Yuba, Sacramento, and Yolo Counties, the westernmost portion of Placer County and the northeastern half of Solano County.

#### *Topography and Meteorology*

Hot dry summers and mild, wet winters characterize the Mediterranean climate of the SVAB. During the year the temperature may range from 20 to 115 degrees Fahrenheit with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 20 inches, and the rainy season generally occurs from November through March. The prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north (SMAQMD 2020).

The mountains surrounding the SVAB create a barrier to airflow, which can trap air pollutants under certain meteorological conditions. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells collect over the Sacramento Valley. The lack of surface wind during these periods and

the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with temperature inversions that trap pollutants near the ground (SMAQMD 2020).

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. During about half of the days from July to September, however, a phenomenon called the "Schultz Eddy" prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out, the Schultz Eddy causes the wind pattern to circle back to the south. This phenomenon has the effect of exacerbating the pollution levels in the area and increases the likelihood of violating federal or state standards (SMAQMD 2020).

## 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 SVAB is shown in Table 2, *Attainment Status of Criteria Pollutants in the Sacramento Valley Air Basin*.

**Table 2 Attainment Status of Criteria Pollutants in the Sacramento Valley Air Basin**

| Pollutant | State | Federal |
|---|---|---|
| Ozone – 1-hour | Nonattainment | No Federal Standard |
| Ozone – 8-hour | Nonattainment | Nonattainment |
| $PM_{10}$ | Nonattainment | Attainment |
| $PM_{2.5}$ | Attainment | Nonattainment |
| CO | Attainment | Unclassified/Attainment |

**Table 2 Attainment Status of Criteria Pollutants in the Sacramento Valley Air Basin**

| Pollutant | State | Federal |
|---|---|---|
| $NO_2$ | Attainment | Unclassified/Attainment |
| $SO_2$ | Attainment | Unclassified/Attainment |
| Lead | Attainment | Unclassified/Attainment |

Source: CARB 2023a.

## 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 PCAPCD. The air quality monitoring station closest to the proposed project is the North Highlands-Blackfoot Way Monitoring Station. Data from this station includes $O_3$ and $PM_{10}$, while $NO_2$ and $PM_{2.5}$ is supplemented with data from the Sacramento-Del Paso Manor Monitoring Station. Based on Table 3, *Ambient Air Quality Monitoring Summary*, the data show that the area regularly exceeds the state and federal eight-hour $O_3$ standards within the last five recorded years. Additionally, the area has regularly exceeded the state and federal $PM_{10}$ standards and federal $PM_{2.5}$ standard.

**Table 3 Ambient Air Quality Monitoring Summary**

| | Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations[1] | | | | |
|---|---|---|---|---|---|
| Pollutant/Standard | 2017 | 2018 | 2019 | 2020 | 2021 |
| **Ozone ($O_3$)** | | | | | |
| State 1-Hour ≥ 0.09 ppm (days exceed threshold) | 2 | 4 | 1 | 3 | 0 |
| State & Federal 8-hour ≥ 0.070 ppm (days exceed threshold) | 8 | 10 | 2 | 5 | * |
| Max. 1-Hour Conc. (ppm) | 0.121 | 0.105 | 0.102 | 0.119 | 0.023 |
| Max. 8-Hour Conc. (ppm) | 0.091 | 0.083 | 0.082 | 0.085 | * |
| **Nitrogen Dioxide ($NO_2$)** | | | | | |
| State 1-Hour ≥ 0.18 ppm (days exceed threshold) | 0 | 0 | 0 | 0 | 0 |
| Federal 1-Hour ≥ 0.100 ppm (days exceed threshold) | 0 | 0 | 0 | 0 | 0 |
| Max. 1-Hour Conc. (ppb) | 0.037 | 0.042 | 0.051 | 0.046 | 0.024 |
| **Coarse Particulates ($PM_{10}$)** | | | | | |
| State 24-Hour > 50 µg/m$^3$ (days exceed threshold) | 3 | 2 | 2 | 8 | 1 |
| Federal 24-Hour > 150 µg/m$^3$ (days exceed threshold) | 0 | 2 | 0 | 1 | 0 |
| Max. 24-Hour Conc. (µg/m$^3$) | 66.0 | 235.0 | 55.0 | 189.0 | 54.0 |
| **Fine Particulates ($PM_{2.5}$)** | | | | | |
| Federal 24-Hour > 35 µg/m$^3$ (days exceed threshold) | 6 | 10 | 3 | 27 | 5 |
| Max. 24-Hour Conc. (µg/m$^3$) | 45.2 | 250.0 | 41.4 | 147.3 | 95.4 |

Source: CARB 2023b.
Notes: ppm = parts per million; ppb = parts per billion; µg/m$^3$ = micrograms per cubic meter; * = Data not available
[1] Most recent data available as of January 2023.

### 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. The nearest sensitive receptors to the proposed project site are the surrounding single-family residences approximately 50 feet to the east.

## Methodology

Projected construction-related air pollutant emissions are calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1. CalEEMod compiles an emissions inventory of construction (fugitive dust, off-gas emissions, on-road emissions, and off-road emissions), area sources, indirect emissions from energy use, mobile sources, indirect emissions from waste disposal (annual only), and indirect emissions from water/wastewater (annual only) use. The calculated emissions of the project are compared to thresholds of significance for individual projects available as part of PCAPCD's 2017 CEQA Handbook (PCAPCD 2017).

## Thresholds of Significance

### Criteria Air Pollutants

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in PCAPCD's *2017 CEQA Handbook* and the significance thresholds on PCAPCD's website. CEQA allows the lead agency to develop and utilize their own significance thresholds in the environmental review of a proposed project. PCAPCD has established thresholds of significance for regional air quality emissions for construction and operational activities based on substantial evidence in their *2017 CEQA Handbook*, which the City is choosing to rely on to determine whether the proposed project may result in potentially significant air quality impacts.

### PAPCD Thresholds of Significance

PCAPCD has adopted regional thresholds of significance for criteria pollutants to determine a project's cumulative impact on air quality in the Sacramento Valley Air Basin (SVAB). Table 4, *PCAPCD Criteria Pollutant*

*Thresholds*, lists the construction and operational phase thresholds that are applicable for all projects uniformly, regardless of size or scope.

**Table 4 PCAPCD Criteria Pollutant Thresholds**

| Air Pollutant | Construction Phase | Operational Phase | |
|---|---|---|---|
| | | Operational Phase Project Level | Operational Phase Cumulative Level |
| Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs) | 82 lbs/day | 55 lbs/day | 55 lbs/day |
| Nitrogen Oxides ($NO_X$) | 82 lbs/day | 55 lbs/day | 55 lbs/day |
| Particulates ($PM_{10}$) | 82 lbs/day | 82 lbs/day | 82 lbs/day |

Source: PCAPCD 2017.

Projects that exceed the criteria pollutant significance thresholds would cumulatively contribute to the nonattainment designation of the SVAB and would contribute to elevating health effects associated to 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 further contribute to reducing possible health effects related to criteria air pollutants.

Mass emissions in Table 4 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SVAB. Therefore, regional emissions from a single project do not usually trigger a regional health impact. PCAPCD is the primary agency responsible for ensuring the health and welfare of individuals sensitive to elevated concentrations of air quality in the SVAB. To achieve the health-based standards established by the Environmental Protection Agency (EPA), PCAPCD prepares an air quality management plan (AQMP) that details regional programs to attain the AAQS.

## CO Hot spots

Areas of vehicle congestion have the potential to create pockets of carbon monoxide (CO) called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 parts per million (ppm) or the 8-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 SVAB and in the state have steadily declined.

Currently, the SVAB is designated attainment for CO under both the California AAQS and National AAQS. According to the PCAPCD, CO concentrations should be analyzed at intersections in the project vicinity if the

proposed project's CO emissions from vehicle operation are more than 550 lbs/day[4] and if either of the following scenarios is true:

- level of service (LOS) would be degraded from acceptable (i.e., A, B, C, or D) to unacceptable (i.e., E or F); or
- if a project would result in the addition of traffic that would substantially worsen (delay of 10 seconds or more with project-generated traffic included) already unacceptable peak-hour LOS intersections.

If a project is identified to have potential CO impacts, the PCAPCD recommends completing a dispersion modeling analysis using CALINE-4 dispersion model to identify potential CO concentrations at the impacted streets or intersections.

## Odors

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the PCAPCD. The PCAPCD regulate odors under PCAPCD Rule 205, *Nuisance,* which states that no person shall 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 the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property (PCAPCD 2017).

## Health Risk

Emissions from construction equipment primarily consist of diesel particulate matter (DPM) and the estimated risk from breathing DPM is greater than the risk from all other airborne TACs combined. To reduce exposure to TACs, CARB developed a handbook for 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 (CARB 2005). This document was developed as a guide and as a tool for assessing the compatibility and associated health risk when placing sensitive receptors near existing pollution sources. Per PCAPCD guidance, all TAC sources within 1,000 feet of a proposed sensitive receptor need to be identified and analyzed.

Demolition or renovation of existing buildings are subject to the National Emission Standard for Hazardous Air Pollutants for Asbestos, to limit asbestos emissions and the associated disturbance of regulated asbestos containing material. Additionally, the siting of new stationary sources of TACs is subject to the rules under PCAPCD's Rule 501, *General Permit Requirements*, where each new and/or operation of existing stationary sources is evaluated to determine whether it has the potential to emit more than 2 lbs in any 24-hour period.

PCAPCD evaluates how to perform risk assessments based on guidance from the OEHHA, CARB, and California Pollution Control Officers Association. Modeling protocol can be viewed in OEHHA Air Toxics Hot Spots Program Guidance Manual and CARB/CAPCOA Risk Management Guidance for Stationary

[4] The recommended screening criteria of 550 lbs/day is referred by the District's NSR rule's emission offset threshold for CO emissions.

Sources of Air Toxics (OEHHA 2015, CARB 2015). New stationary sources of TACs would not be able to operate if it would result in exceeding the TAC thresholds shown in Table 5, *Toxic Air Contaminants Incremental Risk Thresholds*.

**Table 5 Toxic Air Contaminants Incremental Risk Thresholds**

| | |
|---|---|
| Maximum Incremental Cancer Risk[1] | > 1 in 1 million |
| Hazard Index (project increment) | >1.0 |

Source: CARB 2015.
Notes:
[1] Would require Toxics Best Available Control Technology (TBACT)

The purpose of this environmental evaluation is to identify the significant effects of the proposed project on the environment. CEQA does not require CEQA-level environmental document to analyze the environmental effects of attracting development and people to an area (*California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal.4th 369 (Case No. S213478)*). However, the environmental document must analyze the impacts of environmental hazards on future users, when a proposed project exacerbates an existing environmental hazard or condition. Residential, commercial, and office uses do not use substantial quantities of TACs and typically do not exacerbate existing hazards, so these thresholds are typically applied to new industrial projects.

# 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,[5] 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 that contribute to global warming to a lesser extent include nitrous oxide ($N_2O$), sulfur hexafluoride ($SF_6$), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[6] 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.

- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.

    - *Chlorofluorocarbons (CFCs*) are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases

[5] 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.

[6] 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 2017a). 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.

and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

- ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [$CF_4$] and perfluoroethane [$C_2F_6$]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

- ***Sulfur Hexafluoride ($SF_6$)*** is a colorless gas soluble in alcohol and ether, slightly soluble in water. $SF_6$ is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

- ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.

- ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs (IPCC 2001; USEPA 2022).

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 6, *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 $CO_2$.

**Table 6 GHG Emissions and Their Relative Global Warming Potential Compared to $CO_2$**

| GHGs | Second Assessment Report (SAR) Global Warming Potential Relative to $CO_2$[1] | Fourth Assessment Report (AR4) Global Warming Potential Relative to $CO_2$[1] | Fifth Assessment Report (AR5) Global Warming Potential Relative to $CO_2$[1] |
|---|---|---|---|
| Carbon Dioxide ($CO_2$) | 1 | 1 | 1 |
| Methane[2] ($CH_4$) | 21 | 25 | 28 |
| Nitrous Oxide ($N_2O$) | 310 | 298 | 265 |

Source: IPCC 1995, 2007, 2013.

Notes: The IPCC published updated GWP values in its Fifth Assessment Report (AR5) that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of $CO_2$. However, GWP values identified in AR4 are used to maintain consistency in statewide GHG emissions modeling. In addition, the 2017 Scoping Plan Update was based on the GWP values in AR4.

[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.

## California's Greenhouse Gas Sources and Relative Contribution

In 2021, the statewide GHG emissions inventory was updated for 2000 to 2019 emissions using the GWPs in IPCC's AR4 (IPCC 2013). Based on these GWPs, California produced 418.2 $MMTCO_2e$ GHG emissions in 2019. California's transportation sector was the single largest generator of GHG emissions, producing 39.7 percent of the state's total emissions. Industrial sector emissions made up 21.1 percent, and electric power generation made up 14.1 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (10.5 percent), agriculture and forestry (7.6 percent), high GWP (4.9 percent), and recycling and waste (2.1 percent) (CARB 2021).

California's GHG emissions have followed a declining trend since peak levels in 2004. In 2019, emissions from routine GHG-emitting activities statewide were 418.2 $MMTCO_2e$, 7.1 $MMTCO_2e$ lower than 2018 levels and almost 13 $MMTCO_2e$ below the 2020 GHG Limit of 431 $MMTCO_2e$. In 2016, statewide GHG emissions have dropped below the 2020 GHG Limit and have remained below the Limit. During the 2000 to 2019 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14.0 $MTCO_2e$ per capita to 10.5 $MTCO_2e$ per capita in 2019, a 25 percent decrease. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product) has declined 45 percent since the 2001 peak, while the state's gross domestic product has grown 63 percent during the same period. For the first time since California started to track GHG emissions, California uses more electricity from zero-GHG sources (hydro, solar, wind, and nuclear energy) (CARB 2021).

## Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The amount of $CO_2$ in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation (IPCC 2007). These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006). In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime (IPCC 2007).

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

## Potential Climate Change Impacts for California

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide, average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada (CCCC 2012). The years from 2014 through 2016 have shown unprecedented temperatures with 2014 being the warmest (OEHHA 2018). By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1 to 8.6°F, depending on emissions levels (CCCC 2012).

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) advanced shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms (CAT 2006). Overall, California has become drier over time, with five of the eight years of severe to extreme drought occurring between 2007 and 2016, with unprecedented dry years occurring in 2014 and 2015 (OEHHA 2018). Statewide precipitation has become increasingly variable from year to year, with the driest consecutive four years occurring from 2012 to 2015 (OEHHA 2018). According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are shown in Table 6 and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy.

**Table 6 Summary of GHG Emissions Risks to California**

| Impact Category | Potential Risk |
|---|---|
| Public Health Impacts | Heat waves will be more frequent, hotter, and longer<br>Fewer extremely cold nights<br>Poor air quality made worse<br>Higher temperatures increase ground-level ozone levels |
| Water Resources Impacts | Decreasing Sierra Nevada snow pack |

**Table 6 Summary of GHG Emissions Risks to California**

| Impact Category | Potential Risk |
|---|---|
| | Challenges in securing adequate water supply<br>Potential reduction in hydropower<br>Loss of winter recreation |
| Agricultural Impacts | Increasing temperature<br>Increasing threats from pests and pathogens<br>Expanded ranges of agricultural weeds<br>Declining productivity<br>Irregular blooms and harvests |
| Coastal Sea Level Impacts | Accelerated sea level rise<br>Increasing coastal floods<br>Shrinking beaches<br>Worsened impacts on infrastructure |
| Forest and Biological Resource Impacts | Increased risk and severity of wildfires<br>Lengthening of the wildfire season<br>Movement of forest areas<br>Conversion of forest to grassland<br>Declining forest productivity<br>Increasing threats from pest and pathogens<br>Shifting vegetation and species distribution<br>Altered timing of migration and mating habits<br>Loss of sensitive or slow-moving species |
| Energy Demand Impacts | Potential reduction in hydropower<br>Increased energy demand |

Sources: CEC 2006 and 2009, CCCC 2012, CNRA 2014.

# Regulatory Settings

## 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 (USEPA 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 are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

### 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 2026)

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 13990 issued by President Biden, the National Highway Traffic Safety Administration (NHTSA) repealed SAFE Vehicles Rule Part One, which had preempted State and local laws related to fuel economy standards. In addition, on March 31, 2022, the NHTSA finalized new fuel standards which will increase fuel efficiency 8 percent annually for model years 2024 to 2025 and 10 percent annually 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 will be a 10 MPG increase relative to model year 2021 (NHTSA 2022).

### EPA Regulation of Stationary Sources Under the Clean Air Act (Ongoing)

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new, large stationary sources of emissions such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the EPA issued the final Affordable Clean Energy (ACE) rule which became effective on August 19, 2019. The ACE rule was crafted under the direction of President Trump's Energy Independence Executive Order. It officially rescinds the Clean Power Plan rule issued during the Obama Administration and sets emissions guidelines for states in developing plans to limit $CO_2$ emissions from coal-fired power plants.

## 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, Assembly Bill 32 (AB 32), AB 1279, Senate Bill 32 (SB 32), 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.

#### *2017 Climate Change Scoping Plan Update*

EO B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 24, 2017, CARB adopted the 2017 Climate Change Scoping Plan Update, which outlined potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan established a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030 (CARB 2017b).

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and toxic air contaminants emissions limits on across a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZEV buses and trucks;
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).

- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks.
- Implementing the Short-Lived Climate Pollutant Strategy (SLPS), which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to the statewide strategies listed above, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the State's long-term GHG reduction goals and identified local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the State's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population)—consistent with the Scoping Plan and the state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from VMT, and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The 2017 Scoping Plan scenario is set against what is called the business-as-usual (BAU) yardstick—that is, what would the GHG emissions look like if the State did nothing at all beyond the existing policies that are required and already in place to achieve the 2020 limit, as shown in Table 7, *2017 Climate Change Scoping Plan Emissions Reductions Gap*. It includes the existing renewables requirements, advanced clean cars, the "10 percent" Low Carbon Fuel Standard (LCFS), and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-

and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

**Table 7 2017 Climate Change Scoping Plan Emissions Reductions Gap**

| Modeling Scenario | 2030 GHG Emissions $MMTCO_2e$ |
|---|---|
| Reference Scenario (Business-as-Usual) | 389 |
| With Known Commitments | 320 |
| 2030 GHG Target | **260** |
| Gap to 2030 Target | **60** |

Source: CARB 2017b.

Table 8, *2017 Climate Change Scoping Plan Emissions Change by Sector*, provides estimated GHG emissions by sector at 1990 levels, and the range of emissions for each sector estimated for 2030. The following sectors would be applicable to the proposed project: residential and commercial, electric power, recycling and waste, and transportation.

**Table 8 2017 Climate Change Scoping Plan Emissions Change by Sector**

| Scoping Plan Sector | 1990 $MMTCO_2e$ | 2030 Proposed Plan Ranges $MMTCO_2e$ | % Change from 1990 |
|---|---|---|---|
| Agricultural | 26 | 24-25 | -8% to -4% |
| Residential and Commercial | 44 | 38-40 | -14% to -9% |
| Electric Power | 108 | 30-53 | -72% to -51% |
| High GWP | 3 | 8-11 | 267% to 367% |
| Industrial | 98 | 83-90 | -15% to -8% |
| Recycling and Waste | 7 | 8-9 | 14% to 29% |
| Transportation (including TCU) | 152 | 103-111 | -32% to -27% |
| Net Sink[1] | -7 | TBD | TBD |
| Sub Total | 431 | 294-339 | -32% to -21% |
| Cap-and-Trade Program | NA | 24-79 | NA |
| **Total** | **431** | **260** | **-40%** |

Source: CARB 2017b.
Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.
[1] Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

## 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.

### *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 was updated to address 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. This plan expands upon earlier Scoping Plans with a 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 9, *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 (see Table 4.8-4, *Priority Strategies for Local Government Climate Action Plans*).

**Table 9 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). |
| | 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 |

**Table 9 Priority Strategies for Local Government Climate Action Plans**

| Priority Area | Priority Strategies |
|---|---|
| | 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

For residential and mixed-use development projects, CARB recommends this first approach to demonstrate 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.

The second approach to project-level alignment with State climate goals is net zero GHG emissions, especially for new residential development. 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).

### Assembly Bill 1279

On August 31, 2022, the California Legislature passed AB 1279, which requires California to achieve net-zero GHG emissions no later than 2045 and to achieve and maintain negative GHG emissions thereafter. Additionally, AB 1279 also establishes a GHG emissions reduction goal of 85 percent below 1990 levels by 2045. CARB will be required to update the scoping plan to identify and recommend measures to achieve the net-zero and GHG emissions-reduction goals.

### 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).

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).

## 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. On August 25, 2022, CARB adopted the Advanced Clean Cars II (ACC II) regulations that codifies the EO goal of 100 percent of in-state sales of new passenger vehicles and trucks be ZE by 2035. Starting in year 2026, ACC II requires that 35 percent of new vehicles sold be ZE or plug-in hybrids.

## 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. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018, and went into effect on January 1, 2020.

The 2019 standards move toward cutting energy use in new homes by more than 50 percent and require installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less. The 2019 standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements (CEC 2018a). Under the 2019 standards, nonresidential buildings are 30 percent more energy efficient than under the 2016 standards, and single-family homes are 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018a).

Furthermore, 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 become effective and replace the existing 2019 standards on January 1, 2023. 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 2021).

### *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.[7] The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2019. The 2019 CALGreen standards became effective January 1, 2020. The 2022 standards become effective and replace the existing 2019 standards on January 1, 2023.

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.

### *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.

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[7] 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 methane. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing that comprehensive strategy to reduce emissions of short-lived climate pollutants—to reduce 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, which includes a 50 percent reduction in statewide organic waste disposal from 2014 levels by 2020 and a 75 percent reduction from 2014 levels by 2025. Under SB 1383, jurisdictions are required to implement organic waste collection services for all residents and businesses by January 1, 2022. On March 14, 2017, CARB adopted the "Final Proposed 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 2017b). In-use on-road rules were expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

## Regional Regulations

### PCTPA'S REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

PCTPA adopted the Final RTP 2040 RTP in September 2019 to document the policy direction, actions, and funding recommendations to meet the Placer County's transportation systems over the next twenty years (PCTPA 2019). The 2040 RTP was incorporated into the 6-county Metropolitan Transportation Plan (MTP) developed by the Sacramento Area Council of Government's (SACOG). While the 2040 RTP focuses on Placer County, the MTP plans for transportation investments across the 6-county Sacramento region.

The 2040 RTP identifies new growth areas to accommodate jobs and housing that will balance well with the land use and transportation planning within the County. This long-range planning document contains ten goals, each with supporting policies and objectives, to address the County's traffic congestion, mobility needs, and maintenance of existing transportation infrastructure. Some of the overarching goals in the 2040 RTP is to maintain countywide roadway systems, provide regionally and locally coordinated transit service that connects residential areas with employment centers, improve passenger rail service, promote aviation services that complement the countywide transportation system, provide safe and efficient movements of goods throughout the County, and to promote a convenient non-motorized transportation system (PCTPA 2019). The 2040 RTP transportation projects help more efficiently distribute population, housing, and employment growth, and forecast development is generally consistent with regional-level general plan data to promote active transportation and reduce GHG emissions. The projected regional development, when integrated with the proposed regional transportation network in the 2040 RTP, would reduce GHG emissions related to vehicular travel and improve air quality.

## 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.[8]

## PLACER COUNTY AIR POLLUTION CONTROL DISTRICT

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, PCAPCD adopted GHG significance thresholds that include the following three components: bright-line thresholds of 10,000 $MTCO_2e$ per year, efficiency matrix for residential and non-residential development, and de minimis level for the operational phase of 1,100 $MTCO_2e$ per year (PCAPCD 2017). Projects that generate GHG emissions exceeding 10,000 $MTCO_2e$ per year (either the construction or operational phase) or exceeding 1,100 $MTCO_2e$ per year for operational phase would be deemed to have a cumulatively considerable contribution to global climate change. However, a project with GHG operational emissions between 1,100 MT and 10,000 $MTCO_2e$ per year can still be found less than cumulatively considerable when the results of the project's related efficiency analysis meets one of conditions in the efficiency matrix for that applicable land use setting and land use type.

Alternatively, local jurisdictions in Placer County may develop their own climate action plan or greenhouse gas reduction plan that meets all the criteria stated in the CEQA Guidelines Section 15183.5 (b). A consistency analysis with a local qualified plan can be used to determine the project's GHG impact in lieu of applying the PCAPCD's GHG significance thresholds and to determine cumulative GHG impacts. The City does not have a local qualified GHG plan to complete this stream-lined analysis and so PCAPCD requires an assessment of GHG emissions.

For purposes of this analysis, the bright-line thresholds of 10,000 $MTCO_2e$ per year, efficiency matrix of 26.5 $MTCO_2e$ per 1,000 square feet (for non-residential and urban development), and de minimis level for the operational phase of 1,100 $MTCO_2e$ per year is used as the significance thresholds for this proposed project. Therefore, if the project construction- and operation-phase emissions exceed the above thresholds then GHG emissions would be considered to substantially and cumulatively contribute to statewide GHG emissions in the absence of reduction measures.

[8] 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.

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# Assumptions Worksheet

# CalEEMod Inputs - Roseville Joint Union High School District (RJUSD) District Office

| | |
|---|---|
| **Name:** | RJUSD District Office, Construction |
| **Project Number:** | ROSE-04 |
| **Project Location:** | 1750 Cirby Way, Roseville |
| **County:** | Placer County |
| **Climate Zone:** | 15 |
| **Land Use Setting:** | Urban |
| **Operational Year:** | 2025 |
| **Utility Company:** | Roseville Electric, PG&E |
| **Air Basin:** | Mountain Counties |
| **Air District:** | Placer County APCD |
| **TAZ:** | 453 |

| | |
|---|---|
| **Project Site Acreage** | 2.5 |
| **Disturbed Site Acreage** | 2.5 |

## CalEEMod Land Use Inputs

| Project Components | Size | Metric | Gross SQFT | Footprint Acreage[4] | Landscaping (SQFT) |
|---|---|---|---|---|---|
| ***Construction*** | | | | | |
| General Office Building[1] | 26.53 | 1000 sqft | 26,526 | 0.96 | 28,538 |
| Parking[2] | 123 | Space | 56,900 | 1.31 | 0 |
| Non-Parking Hardscape[3] | 8.59 | 1000 sqft | 8,590 | 0.20 | 0 |
| | | **TOTALS** | **92,016** | **2.5** | **28,538** |

**Notes**

1 The General Office Building land use represents the proposed administrative building.

2 The Parking land use represents proposed parking space.

3 The Non-Asphalt Surfaces land use represent proposed non-parking hardscape.

4 Footprint acreage consists of the building/feature footprint combined with ground-level landscaping associated with that building/feature.

**Demolition Debris**

| Component | Amount to be Demolished (Tons) |
|---|---|
| P1 Asphalt Demolition Debris Haul | 548 |
| P2 Asphalt Demolition Debris Haul | 978 |
| Building Demolition Debris Haul | 339 |
| **Total** | 1,865 |

**Soil Haul**

| Construction Activities | Volume (CY) |
|---|---|
| P1 Rough Grading Soil Haul | 1,529 |
| P2 Rough Grading Soil Haul | 3,471 |
| **Total** | 5,000 |

**Demolition**

| Component | Amount to be Demolished (Tons) | Haul Truck Capacity (Tons)[1] | Haul Distance (miles)[1] | Total Trip Ends | Duration (days) | Trip Ends/Day[2] |
|---|---|---|---|---|---|---|
| Building Demolition Debris Haul | 339 | 20 | 20 | 34 | 20 | 6 |
| P1 Asphalt Demolition Debris Haul | 548 | 20 | 20 | 56 | 5 | 6 |
| P2 Asphalt Demolition Debris Haul | 978 | 20 | 20 | 98 | 10 | 6 |
| **Total** | 887 | | | 90 | | 12 |

Notes:

1 CalEEMod default used.

2 Included 3 End dump trucks (assume 6 trips/day) as provided by Applicant.

**Soil Haul**[1]

| Construction Activities | Volume (CY) | Haul Truck Capacity (CY)[1] | Haul Distance (miles)[1] | Total Trip Ends | Duration (days) | Trip Ends/Day |
|---|---|---|---|---|---|---|
| P1 Rough Grading soil haul (export) | 1,529 | 16 | 20 | 192 | 20 | 10 |
| P2 Rough Grading soil haul (export) | 3,471 | 16 | 20 | 434 | 12 | 36 |

**Notes:**

1 CalEEMod default used.

**Architectural Coating**

| | Percent Painted | |
|---|---|---|
| *Interior Painted:* | 75% | |
| *Exterior Painted:* | 1% | |
| **Non-Residential:**[1] | | |
| *Interior Paint VOC content:* | 0.15 | grams per liter |
| *Exterior Paing VOC content:* | 44 | grams per liter |
| **Parking:**[1] | | |
| *Interior Paint VOC content:* | - | grams per liter |
| *Exterior Paing VOC content:* | 100 | grams per liter |

**Notes**

1 Parking coating VOC content represents CalEEMod default values while non-residential coating VOC content represents information provided by project applicant.

**CalEEMod Construction Measures/Basic Construction Emission Control Practices (BMPs)**

Rule 228, Fugitive Dust

Water Exposed Surfaces C-10-A

| | | |
|---|---|---|
| Frequency: | 2 | per day |
| PM10: | 61 | % Reduction |
| PM2.5: | 61 | % Reduction |

Water Active Demolition Sites C-10-B

| | | |
|---|---|---|
| Frequency: | 2 | per day |
| PM10: | 36 | % Reduction |
| PM2.5: | 36 | % Reduction |

Water Unpaved Construction Roads C-10-C

| | | |
|---|---|---|
| Frequency: | 2 | per day |
| PM10: | 55 | % Reduction |
| PM2.5: | 55 | % Reduction |

Limit Vehicle Speeds on Unpaved Roads C-11

| | | |
|---|---|---|
| Unpaved Vehicle Speed: | 25 | mph |
| PM10: | 44 | % Reduction |
| PM2.5: | 44 | % Reduction |

Sweep Paved Roads Once per Month C-12

| | | |
|---|---|---|
| PM10: | 9 | % PM Reduction |
| PM2.5: | 9 | % PM Reduction |

| Structures/Features | Land Use Square Feet | CalEEMod Factor[2] | Total Paintable Surface Area | Paintable Interior Area[1] | Paintable Exterior Area[1] |
|---|---|---|---|---|---|
| **Non-Residential Structures** | | | | | |
| General Office Building | 26,526 | 2.0 | 53,052 | 29,842 | 133 |
| | | | 53,052 | **29,842** | **133** |
| **Parking** | | | | | |
| Parking | 56,900 | | | - | **3,929** |

**Notes:**

1 CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 1 percent as provided by Applicant.

2 The program assumes the total surface for painting equals 2 times the floor square footage for nonresidential square footage defined by the user.

3 CalEEMod default used.

## Pavement and Building Demolition Volume to Weight Conversion

| Component | Total SF of Area[1] | Assumed Thickness (foot)[2] | Debris Volume (cu. ft) | Weight of Crushed Asphalt (lbs/cf)[3] | AC Mass (lbs) | AC Mass (tons) |
|---|---|---|---|---|---|---|
| P1 Asphalt Demo | 37,000 | 0.333 | 12,333 | 89 | 1,096,296 | 548 |
| P2 Asphalt Demo | 66,000 | 0.333 | 22,000 | 89 | 1,955,556 | 978 |

[1] Based on information provided by project applicant.

[2] Pavements and Surface Materials. Nonpoint Education for Municipal Officials, Technical Paper Number 8. University of Connecticut Cooperative Extension System, 1999.

[3] https://www.delmar.ca.us/DocumentCenter/View/5668/CalRecycle-Conversion-Table

| Component | Total SF of Area[1] | Tons/SF[2] | Tons |
|---|---|---|---|
| Building Demo | 7,376 | 0.046 | 339 |

[1] Based on information provided by project applicant.

[2] Conversion factor drawn from CalEEMod Version 2022.1 Appendix C: Emission Calculation Details for CalEEMod.

# CalEEMod Inputs - Roseville Joint Union High School District (RJUSD) District Office

**Name:** RJUSD District Office, Operation
**Project Number:** ROSE-04
**Project Location:** 1750 Cirby Way, Roseville
**County:** Placer County
**Climate Zone:** 15
**Land Use Setting:** Urban
**Operational Year:** 2025
**Utility Company:** Roseville Electric, PG&E
**Air Basin:** Mountain Counties
**Air District:** Placer County APCD
**TAZ:** 453

| | |
|---|---|
| **Project Site Acreage** | 2.5 |
| **Disturbed Site Acreage** | 2.5 |

## CalEEMod Land Use Inputs

| Project Components | Size | Metric | Gross SQFT | Footprint SQFT[4] | Landscaping (SQFT) |
|---|---|---|---|---|---|
| ***Construction*** | | | | | |
| General Office Building[1] | 26.53 | 1000 sqft | 26,526 | 0.9596 | 28,538 |
| Parking[2] | 123 | Space | 56,900 | 1.3062 | 0 |
| Non-Parking Hardscape[3] | 8.59 | 1000 sqft | 8,590 | 0.1972 | 0 |
| | | **TOTALS** | **92,016** | **2.5** | **28,538** |

**Notes**

1 The General Office Building land use represents the proposed administrative building.

2 The Parking land use represents proposed parking space.

3 The Non-Asphalt Surfaces land use represent proposed non-parking hardscape.

4 Footprint acreage consists of the building/feature footprint combined with ground-level landscaping associated with that building/feature.

**Trips**

| Land Use Type | Average Daily Trips[2] | CalEEMod Trip Rate | Saturday Trips | CalEEMod Trip Rate | Sunday Trips | CalEEMod Trip Rate |
|---|---|---|---|---|---|---|
| **General Office Building** | 130 | **4.90** | 0 | **0.00** | 0 | **0.00** |

**Notes**

1 The proposed administrative building would not operate on the weekends.

2 Based on the assumption that 10 or fewer employees would generate 20-25 trips per day, see Section 3.17 Transportation.

**Water Use [1]**

| | Indoor (gpy) | Outdoor (gpy) | Total |
|---|---|---|---|
| General Office Building | 4,715,276.00 | 328,336.00 | 5,043,612.00 |

Notes

1 CalEEMod defaults used, assumes 100% aerobic treatment.

**Solid Waste**

| Land Use | Total Solid Waste (tons/yr) |
|---|---|
| **General Office Building** | 24.67 |

Notes

1 CalEEMod default used.

**Electricity (Buildings)**

**Default CalEEMod Energy Use**

| Land Use Subtype | Total Annual Electricity Consumption (kWh/year) | Total Annual Natural Gas Consumption (kBTU/year) | Title-24 Electricity Energy Intensity (kWhr/size/year)* | Title-24 Natural Gas Energy Intensity (KBTU/size/year)* | Nontitle-24 Electricity Energy Intensity (kWhr/size/year) | Nontitle-24 Natural Gas Energy Intensity (KBTU/size/year) |
|---|---|---|---|---|---|---|
| **General Office Building** | 540,758.70 | 840,379.03 | **368,741.17** | **726,308.68** | 172,017.54 | 114,070.35 |
| **Parking** | 49,842.71 | 0.00 | **49,842.71** | **0.00** | 0.00 | 0.00 |
| **Non-Parking Hardscape** | 0.00 | 0.00 | **0.00** | **0.00** | 0.00 | 0.00 |

**Architectural Coating**

| | Percent Painted | |
|---|---|---|
| *Interior Painted:* | 75% | |
| *Exterior Painted:* | 1% | |
| **Non-Residential:**[1] | | |
| *Interior Paint VOC content:* | 0.15 | grams per liter |
| *Exterior Paing VOC content:* | 44 | grams per liter |
| **Parking:**[1] | | |
| *Interior Paint VOC content:* | - | grams per liter |
| *Exterior Paing VOC content:* | 100 | grams per liter |

**Notes**

1 Parking coating VOC content represents CalEEMod default values while non-residential coating VOC content represents information provided by project applicant.

**CalEEMod Operation Measures**

Require Low-Flow Water Fixtures W-4

| | | |
|---|---|---|
| Toilet: | 51 | Fixture % of Total Indoor Water Use |
| | 13 | % Reduction in Flow |
| Urinal | 12 | Fixture % of Total Indoor Water Use |
| | 12 | % Reduction in Flow |
| Showerhead | 5 | Fixture % of Total Indoor Water Use |
| | 11 | % Reduction in Flow |
| Bathroom Faucet | 3 | Fixture % of Total Indoor Water Use |
| | 30 | % Reduction in Flow |
| Kitchen Faucet | 4 | Fixture % of Total Indoor Water Use |
| | 11 | % Reduction in Flow |
| Dishwashers | 2 | Fixture % of Total Indoor Water Use |
| | 20 | % Reduction in Flow |

| Structures/Features | Land Use Square Feet | CalEEMod Factor[2] | Total Paintable Surface Area | Paintable Interior Area[1] | Paintable Exterior Area[1] |
|---|---|---|---|---|---|
| **Non-Residential Structures** | | | | | |
| General Office Building | 26,526 | 2.0 | 53,052 | 29,842 | 133 |
| | | | 53,052 | **29,842** | **133** |
| **Parking** | | | | | |
| Parking | 56,900 | | | - | **3,929** |

**Notes:**

1 CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 1 percent as provided by Applicant.

2 The program assumes the total surface for painting equals 2 times the floor square footage for nonresidential square footage defined by the user.

3 CalEEMod default used.

**PG&E Carbon Intensity Factors**[1]

| | | |
|---|---|---|
| CO2: | 391.49 | pounds per megawatt hour |
| CH4: | 0.033 | pound per megawatt hour |
| N2O: | 0.004 | pound per megawatt hour |

**Notes:**

1 CalEEMod default values.

## Construction Activities and Schedule Assumptions

| | | Construction Schedule | | |
|---|---|---|---|---|
| **Construction Activities** | **Phase Type** | **Start Date** | **End Date** | **CalEEMod Duration (Workday)** |
| Site Preparation | Site Preparation | 6/1/2023 | 6/20/2023 | 14 |
| P1 Asphalt Demolition | Demolition | 6/21/2023 | 6/27/2023 | 5 |
| P1 Utility Trenching | Trenching | 6/28/2023 | 11/21/2023 | 105 |
| P1 Rough Grading | Grading | 7/19/2023 | 8/15/2023 | 20 |
| Building Construction | Building Construction | 8/1/2023 | 9/23/2024 | 300 |
| P2 Asphalt Demolition | Demolition | 10/31/2024 | 11/13/2024 | 10 |
| P2 Utility Trenching | Trenching | 11/7/2024 | 11/27/2024 | 15 |
| P2 Rough Grading | Grading | 11/13/2024 | 11/28/2024 | 12 |
| Fine Grading | Grading | 11/28/2024 | 1/13/2025 | 33 |
| Paving | Paving | 12/26/2024 | 12/30/2024 | 3 |
| Architectural Coating | Architectural Coating | 3/1/2024 | 7/24/2024 | 104 |
| P1 Landscaping/Finishing | Trenching | 5/31/2024 | 8/19/2024 | 57 |
| Building Demolition | Demolition | 10/10/2024 | 11/6/2024 | 20 |
| P2 Landscaping/Finishing | Trenching | 11/28/2024 | 1/13/2025 | 33 |

## CalEEMod Construction Off-Road Equipment Inputs

**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] *per 8-hour day.*

| Construction Equipment Details | | | | | | |
|---|---|---|---|---|---|---|
| **CalEEMod Equipment** | **Equipment Given** | **# of Equipment** | **hr/day** | **hp** | **load factor*** | **total trips per day** |
| **Building Demolition** | | | | | | |
| Excavator | CAT 349 | 1 | 8 | 396 | 0.38 | |
| Skid Steer Loader | CAT 262D | 1 | 8 | 74.3 | 0.37 | |
| Worker Trips | | | | | | 5 |
| Vendor Trips | | | | | | 0 |
| Hauling Trips[1] | | | | | | 6 |
| Water Trucks | | | Acres Disturbed: | | | 0 |
| **P1 Asphalt Demolition** | | | | | | |
| Excavator | CAT 349 | 1 | 8 | 396 | 0.38 | |
| Worker Trips | | | | | | 3 |
| Vendor Trips | | | | | | 0 |
| Hauling Trips[1] | | | | | | 6 |
| **P2 Asphalt Demolition** | | | | | | |
| Excavator | CAT 349 | 1 | 8 | 396 | 0.38 | |
| Worker Trips | | | | | | 3 |
| Vendor Trips | | | | | | 0 |
| Hauling Trips[1] | | | | | | 6 |
| **Site Preperation** | | | | | | |
| Rubber Tired Dozer | CAT D6 | 1 | 8 | 202 | 0.4 | |
| Worker Trips | | | | | | 3 |
| Vendor Trips | | | | | | 0 |
| Hauling Trips | | | | | | 0 |
| Water Trucks | | | Acres Disturbed: | 0.5 | | 4 |
| **P1 Rough Grading** | | | | | | |
| Rubber Tired Dozer | CAT D6 | 1 | 8 | 202 | 0.4 | |
| Excavator | CAT 349 | 1 | 8 | 396 | 0.38 | |
| Worker Trips | | | | | | 5 |
| Vendor Trips | | | | | | 0 |
| Hauling Trips | | | | | | 10 |
| Water Trucks | | | Acres Disturbed: | 0.5 | | 4 |
| **P2 Rough Grading** | | | | | | |
| Rubber Tired Dozer | CAT D6 | 1 | 8 | 202 | 0.4 | |
| Excavator | CAT 349 | 1 | 8 | 396 | 0.38 | |
| Worker Trips | | | | | | 5 |
| Vendor Trips | | | | | | 0 |
| Hauling Trips | | | | | | 36 |
| Water Trucks | | | Acres Disturbed: | 0.5 | | 4 |
| **Fine Grading** | | | | | | |
| Rubber Tired Dozer | CAT D6 | 1 | 8 | 202 | 0.4 | |
| Tractors/Loaders/Backhoes | CAT 420 | 2 | 8 | 100 | 0.37 | |
| Rollers | CB68B | 2 | 8 | 142 | 0.38 | |
| Worker Trips | | | | | | 13 |
| Vendor Trips | | | | | | 0 |
| Hauling Trips | | | | | | 0 |
| Water Trucks | | | Acres Disturbed: | 1.5 | | 8 |
| **P1 Utility Trenching** | | | | | | |
| Excavator | CAT 349 | 1 | 8 | 396 | 0.38 | |
| Tractors/Loaders/Backhoes | CAT 420 | 1 | 8 | 100 | 0.37 | |
| Rubber Tired Loaders | CAT 950 | 1 | 8 | 23 | 0.36 | |
| Worker Trips | | | | | | 8 |
| Vendor Trips | | | | | | 0 |
| Hauling Trips | | | | | | 0 |
| Water Trucks | | | Acres Disturbed: | 1 | | 6 |
| **P2 Utility Trenching** | | | | | | |
| Excavator | CAT 349 | 1 | 8 | 396 | 0.38 | |
| Tractors/Loaders/Backhoes | CAT 420 | 1 | 8 | 100 | 0.37 | |
| Rubber Tired Loaders | CAT 950 | 1 | 8 | 23 | 0.36 | |
| Worker Trips | | | | | | 8 |
| Vendor Trips | | | | | | 0 |
| Hauling Trips | | | | | | 0 |
| Water Trucks | | | Acres Disturbed: | 1 | | 6 |
| **Building Construction** | | | | | | |
| Forklifts | NA | 1 | 8 | 100 | 0.2 | |
| Worker Trips | | | | | | 8 |
| Vendor Trips | | | | | | 4 |
| Hauling Trips | | | | | | 0 |
| **Paving** | | | | | | |
| Tractors/Loaders/Backhoes | CAT 420 | 2 | 8 | 100 | 0.37 | |
| Rollers | CB68B | 2 | 8 | 142 | 0.38 | |
| Pavers | APF1055 | 1 | 8 | 225 | 0.42 | |
| Worker Trips | | | | | | 13 |
| Vendor Trips | | | | | | 0 |
| Hauling Trips | | | | | | 0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Architectural Coating**[2] | | | | | | | |
| | Air Compressors | | 1 | 6 | 37 | 0.48 | |
| | Worker Trips | | | | | | 2 |
| | Vendor Trips | | | | | | 0 |
| | Hauling Trips | | | | | | 0 |
| **P1 Finishing/Landscaping** | | | | | | | |
| | Skid Steer Loaders | NA | 1 | 8 | 75 | 0.37 | |
| | Worker Trips | | | | | | 3 |
| | Vendor Trips | | | | | | 0 |
| | Hauling Trips | | | | | | 0 |
| **P2 Finishing/Landscaping** | | | | | | | |
| | Skid Steer Loaders | NA | 1 | 8 | 75 | 0.37 | |
| | Worker Trips | | | | | | 3 |
| | Vendor Trips | | | | | | 0 |
| | Hauling Trips | | | | | | 0 |

**Notes**

1 Included 3 End dump trucks (assume 6 trips/day) as provided by Applicant.

2 CalEEMod default equipment used.

| Phase Name | Worker Trip Ends Per Day | Vendor Trip Ends Per Day | Total Haul Truck Trip Ends | Start Date | End Date | Workdays |
|---|---|---|---|---|---|---|
| Site Preparation | 3 | 4 | 0 | 6/1/2023 | 6/20/2023 | 14 |
| P1 Asphalt Demolition | 3 | 0 | 6 | 6/21/2023 | 6/27/2023 | 5 |
| P1 Utility Trenching | 8 | 6 | 0 | 6/28/2023 | 11/21/2023 | 105 |
| P1 Rough Grading | 5 | 4 | 10 | 7/19/2023 | 8/15/2023 | 20 |
| Building Construction | 8 | 4 | 0 | 8/1/2023 | 9/23/2024 | 300 |
| P2 Asphalt Demolition | 3 | 0 | 6 | 10/31/2024 | 11/13/2024 | 10 |
| P2 Utility Trenching | 8 | 6 | 0 | 11/7/2024 | 11/27/2024 | 15 |
| P2 Rough Grading | 5 | 4 | 36 | 11/13/2024 | 11/28/2024 | 12 |
| Fine Grading | 13 | 8 | 0 | 11/28/2024 | 1/13/2025 | 33 |
| Paving | 13 | 0 | 0 | 12/26/2024 | 12/30/2024 | 3 |
| Architectural Coating | 2 | 0 | 0 | 3/1/2024 | 7/24/2024 | 104 |
| P1 Landscaping/Finishing | 3 | 0 | 0 | 5/31/2024 | 8/19/2024 | 57 |
| Building Demolition | 5 | 0 | 6 | 10/10/2024 | 11/6/2024 | 20 |
| P2 Landscaping/Finishing | 3 | 0 | 0 | 11/28/2024 | 1/13/2025 | 33 |

| Construction Activity (Overlapping) | Worker Trip Ends Per Day | Vendor Trip Ends Per Day | Haul Truck Trip Ends Per Day | Start Date | End Date | Workdays |
|---|---|---|---|---|---|---|
| Site Preparation | 3 | 4 | 0 | 6/1/2023 | 6/20/2023 | 14 |
| P1 Asphalt Demolition | 3 | 0 | 6 | 6/21/2023 | 6/27/2023 | 5 |
| P1 Utility Trenching | 8 | 6 | 0 | 6/28/2023 | 7/18/2023 | 15 |
| P1 Utility Trenching and P1 Rough Grading | 13 | 10 | 10 | 7/19/2023 | 7/31/2023 | 9 |
| P1 Utility Trenching, P1 Rough Grading, and Building Construction | 21 | 14 | 10 | 8/1/2023 | 8/15/2023 | 11 |
| P1 Utility Trenching and Building Construction | 16 | 10 | 0 | 8/16/2023 | 11/21/2023 | 70 |
| Building Construction | 8 | 4 | 0 | 11/22/2023 | 2/29/2024 | 72 |
| Building Construction and Architectural Coating | 10 | 4 | 0 | 3/1/2024 | 5/30/2024 | 65 |
| Building Construction, Architectural Coating, and P1 Finishing/Landscaping | 13 | 4 | 0 | 5/31/2024 | 7/24/2024 | 39 |
| Building Construction and P1 Finishing/Landscaping | 11 | 4 | 0 | 7/25/2024 | 8/19/2024 | 18 |
| Building Construction | 8 | 4 | 0 | 8/20/2024 | 9/23/2024 | 25 |
| Building Demolition | 5 | 0 | 6 | 10/10/2024 | 10/30/2024 | 15 |
| Building Demolition and P2 Asphalt Demolition | 8 | 0 | 12 | 10/31/2024 | 11/6/2024 | 5 |
| P2 Asphalt Demolition and P2 Utility Trenching | 11 | 6 | 6 | 11/7/2024 | 11/12/2024 | 4 |
| P2 Asphalt Demolition, P2 Utility Trenching, and P2 Rough Grading | 16 | 10 | 42 | 11/13/2024 | 11/13/2024 | 1 |
| P2 Utility Trenching and P2 Rough Grading | 13 | 10 | 36 | 11/14/2024 | 11/27/2024 | 10 |
| P2 Rough Grading, Fine Grading, and P2 Finishing/Landscaping | 24 | 14 | 0 | 11/28/2024 | 11/28/2024 | 1 |
| Fine Grading and P2 Landscaping/Finishing | 16 | 8 | 0 | 11/29/2024 | 12/25/2024 | 19 |
| Fine Grading, P2 Landscaping/Finishing and Paving | 29 | 8 | 0 | 12/26/2024 | 12/30/2024 | 3 |
| Fine Grading and P2 Landscaping/Finishing | 16 | 8 | 0 | 1/1/2025 | 1/13/2025 | 9 |
| **Maximum Daily Trips** | **29** | **14** | **42** | | | |

## Changes to the CalEEMod Defaults - Fleet Mix 2025

Trips 130

| Default | HHD | LDA | LDT1 | LDT2 | LHD1 | LHD2 | MCY | MDV | MH | MHD | OBUS | SBUS | UBUS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FleetMix (Model Default) | 0.848111883 | 40.7122016 | 4.829192534 | 25.13076961 | 4.413497075 | 1.110187545 | 3.007974848 | 17.71664619 | 0.6471592 | 1.326085068 | 0.076955103 | 0.130126101 | 0.051091303 | |
| FleetMix (Model Default) adjusted | 0.008481119 | 0.407122016 | 0.048291925 | 0.251307696 | 0.044134971 | 0.011101875 | 0.030079748 | 0.177166462 | 0.006471592 | 0.013260851 | 0.000769551 | 0.001301261 | 0.000510913 | 100% |
| Trips | 1 | 53 | 6 | 33 | 6 | 1 | 4 | 23 | 1 | 2 | 0 | 0 | 0 | 130 |
| Percent | | 74% | | | 9% | | | 18% | | | | | | 100% |
| without buses/MH | 0.008481 | 0.407122 | 0.048292 | 0.251308 | 0.044135 | 0.011102 | 0.030080 | 0.177166 | 0.006472 | 0.013261 | 0 | 0.001301 | 0 | 100% |
| Percent | | 74% | | | 8% | | | 18% | | | | | | 100% |
| Adjusted without buses/MH | 0.008609 | 0.407122 | 0.048292 | 0.251308 | 0.044802 | 0.011270 | 0.030534 | 0.177166 | 0.006569 | 0.013461 | 0.000000 | 0.001321 | 0.000000 | |
| Percent adjusted | | 74% | | | 9% | | | 18% | | | | | | 100% |
| Assumed Mix | | 97.0% | | | 1.00% | | | 2.00% | | | | | | 100% |
| | 0.001001 | 0.535646 | 0.063537 | 0.330643 | 0.005208 | 0.001310 | 0.040174 | 0.020000 | 0.000764 | 0.001565 | 0.000000 | 0.000154 | 0.000000 | 100% |
| **adjusted with Assumed** | **0.100070** | **53.564629** | **6.353719** | **33.064297** | **0.520756** | **0.130993** | **4.017354** | **2.000000** | **0.076359** | **0.156467** | **0.000000** | **0.015354** | **0.000000** | |
| Percent Check: | | 97% | | | 1% | | | 2% | | | | | | |
| Trips | 0 | 70 | 8 | 43 | 1 | 0 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 130 |
| | | *126* | | | *9* | | | *3* | | | | | | |

*higher proportion of passenger vehicles that the regional VMT. Assumes a mix of approximately*

# Emissions Worksheet

## Average Daily Emissions- Construction Unmitigated

| Total Construction Days | 2023 | 2024 | 2025 | Calendar Days |
|---|---|---|---|---|
| 423 | 152 | 262 | 9 | 593 |

| Unmigated Run - with Best Control Measures for Fugitive Dust | | | |
|---|---|---|---|
| **average lbs/day (max)** | ROG | NOx | Exhaust PM10 |
| **Unmit.** | 0.47 | 3.42 | 0.18 |
| **PCACPD Construction Thresholds** | 82 | 82 | 82 |
| **Exceeds Threshold** | No | No | No |

## Average Daily Emissions- Operation Unmitigated

| Unmigated Run - with Low-Flow Water Fixtures Measure | | | |
|---|---|---|---|
| **average lbs/day (max)** | ROG | NOx | Exhaust PM10 |
| **Unmit.** | 1.07 | 0.43 | 0.02 |
| **PACPD Operation Thresholds** | 55 | 55 | 82 |
| **Exceeds Threshold** | No | No | No |

# GHG Emissions Inventory

## Proposed Project Buildout

**Construction**[1]

| | $MTCO_2e$ | % |
|---|---|---|
| 2023 | 158 | 48% |
| 2024 | 157 | 48% |
| 2025 | 13 | 4% |
| **Total Construction** | **328** | 100% |
| **30-Year Amortization**[2] | **11** | |

**Notes:**

[1] CalEEMod, Version 2022.1. Full buildout modeled.

[2] Total construction emissions are amortized over 30 years per PCAPCD methodology.

**Operations**[1]

| | $MTCO_2e$ | % |
|---|---|---|
| Mobile | 98 | 36% |
| Area | 0 | 0% |
| Energy | 150 | 55% |
| Water | 5 | 2% |
| Solid Waste | 8 | 3% |
| Refrigerants | 0 | 0% |
| **30-Year Amortization** | 11 | 4% |
| **Total** | **272** | 100% |
| PCAPCD De Minis Level for Operational Phase | **1,100** | |
| **Exceed Threshold?** | **No** | |

**Notes:**

[1] CalEEMod, Version 2022.1. Full buildout modeled.

[2] $MTCO_2e$=metric tons of carbon dioxide equivalent.

## Construction Schedule

| Phase Name | Start Date | End Date | CalEEMod Days | Total Days |
|---|---|---|---|---|
| Site Preparation | 6/1/2023 | 6/20/2023 | 14 | **19** |
| P1 Asphalt Demolition | 6/21/2023 | 6/27/2023 | 5 | **6** |
| P1 Utility Trenching | 6/28/2023 | 11/21/2023 | 105 | **146** |
| P1 Rough Grading | 7/19/2023 | 8/15/2023 | 20 | **27** |
| Building Construction | 8/1/2023 | 9/23/2024 | 300 | **419** |
| P2 Asphalt Demolition | 10/31/2024 | 11/13/2024 | 10 | **13** |
| P2 Utility Trenching | 11/7/2024 | 11/27/2024 | 15 | **20** |
| P2 Rough Grading | 11/13/2024 | 11/28/2024 | 12 | **15** |
| Fine Grading | 11/28/2024 | 1/13/2025 | 33 | **46** |
| Paving | 12/26/2024 | 12/30/2024 | 3 | **4** |
| Architectural Coating | 3/1/2024 | 7/24/2024 | 104 | **145** |
| P1 Landscaping/Finishing | 5/31/2024 | 8/19/2024 | 57 | **80** |
| Building Demolition | 10/10/2024 | 11/6/2024 | 20 | **27** |
| P2 Landscaping/Finishing | 11/28/2024 | 1/13/2025 | 33 | **46** |

| Number of Construction Days Per Year | | | |
|---|---|---|---|
| 2023 | 6/1/2023 | 12/31/2023 | 152 |
| 2024 | 1/1/2024 | 12/31/2024 | 262 |
| 2025 | 1/1/2025 | 1/13/2025 | 9 |
| | | **TOTAL CONSTRUCTION DAYS** | 423 |

| Total Days Per Year | | |
|---|---|---|
| 1/1/2023 | 12/31/2023 | 260 |
| 1/1/2024 | 12/31/2024 | 262 |
| 1/1/2025 | 12/31/2025 | 261 |
| | **TOTAL DAYS** | 783 |

# CalEEMod Construction and Operation Model

# RJUSD District Office Custom Report

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# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | RJUSD District Office |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 3.50 |
| Precipitation (days) | 36.8 |
| Location | 38.72916453629588, -121.25844003276913 |
| County | Placer-Sacramento |
| City | Roseville |
| Air District | Placer County APCD |
| Air Basin | Sacramento Valley |
| TAZ | 453 |
| EDFZ | 15 |
| Electric Utility | Roseville Electric |
| Gas Utility | Pacific Gas & Electric |

## 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 |
|---|---|---|---|---|---|---|---|---|
| General Office Building | 26.5 | 1000sqft | 0.96 | 26,526 | 28,538 | 0.00 | — | — |
| Parking Lot | 123 | Space | 1.31 | 0.00 | 0.00 | 0.00 | — | — |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Other Non-Asphalt Surfaces | 8.59 | 1000sqft | 0.20 | 0.00 | 0.00 | 0.00 | — | — |

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

| Sector | # | Measure Title |
|---|---|---|
| Water | W-4 | Require Low-Flow Water Fixtures |

# 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. | 2.08 | 1.74 | 16.1 | 14.4 | 0.05 | 0.62 | 3.03 | 3.64 | 0.57 | 1.43 | 2.00 | — | 5,551 | 5,551 | 0.19 | 0.22 | 3.43 | 5,624 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 3.59 | 3.75 | 31.4 | 29.4 | 0.09 | 1.45 | 6.05 | 7.50 | 1.34 | 2.88 | 4.22 | — | 9,015 | 9,015 | 0.27 | 0.59 | 0.21 | 9,196 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.49 | 0.47 | 3.42 | 3.59 | 0.01 | 0.18 | 0.42 | 0.61 | 0.17 | 0.17 | 0.34 | — | 946 | 946 | 0.03 | 0.04 | 0.34 | 956 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.09 | 0.09 | 0.62 | 0.66 | < 0.005 | 0.03 | 0.08 | 0.11 | 0.03 | 0.03 | 0.06 | — | 157 | 157 | 0.01 | 0.01 | 0.06 | 158 |

## 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2023 | 2.08 | 1.74 | 16.1 | 14.4 | 0.05 | 0.62 | 3.03 | 3.64 | 0.57 | 1.43 | 2.00 | — | 5,551 | 5,551 | 0.19 | 0.22 | 3.43 | 5,624 |
| 2024 | 0.97 | 1.00 | 5.61 | 4.97 | 0.01 | 0.45 | 0.15 | 0.60 | 0.42 | 0.04 | 0.45 | — | 823 | 823 | 0.03 | 0.03 | 0.81 | 832 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2023 | 0.85 | 0.72 | 5.54 | 7.18 | 0.02 | 0.21 | 0.22 | 0.42 | 0.19 | 0.05 | 0.25 | — | 2,480 | 2,480 | 0.09 | 0.06 | 0.04 | 2,502 |
| 2024 | 3.59 | 3.75 | 31.4 | 29.4 | 0.09 | 1.45 | 6.05 | 7.50 | 1.34 | 2.88 | 4.22 | — | 9,015 | 9,015 | 0.27 | 0.59 | 0.21 | 9,196 |
| 2025 | 2.34 | 1.96 | 17.6 | 16.7 | 0.03 | 0.93 | 2.75 | 3.68 | 0.86 | 1.36 | 2.22 | — | 3,046 | 3,046 | 0.11 | 0.06 | 0.03 | 3,067 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2023 | 0.35 | 0.29 | 2.50 | 2.66 | 0.01 | 0.10 | 0.34 | 0.43 | 0.09 | 0.15 | 0.23 | — | 946 | 946 | 0.03 | 0.03 | 0.24 | 956 |
| 2024 | 0.49 | 0.47 | 3.42 | 3.59 | 0.01 | 0.18 | 0.42 | 0.61 | 0.17 | 0.17 | 0.34 | — | 933 | 933 | 0.03 | 0.04 | 0.34 | 946 |
| 2025 | 0.06 | 0.05 | 0.45 | 0.43 | < 0.005 | 0.02 | 0.07 | 0.09 | 0.02 | 0.03 | 0.06 | — | 77.6 | 77.6 | < 0.005 | < 0.005 | 0.01 | 78.1 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2023 | 0.06 | 0.05 | 0.46 | 0.48 | < 0.005 | 0.02 | 0.06 | 0.08 | 0.02 | 0.03 | 0.04 | — | 157 | 157 | 0.01 | < 0.005 | 0.04 | 158 |
| 2024 | 0.09 | 0.09 | 0.62 | 0.66 | < 0.005 | 0.03 | 0.08 | 0.11 | 0.03 | 0.03 | 0.06 | — | 154 | 154 | 0.01 | 0.01 | 0.06 | 157 |
| 2025 | 0.01 | 0.01 | 0.08 | 0.08 | < 0.005 | < 0.005 | 0.01 | 0.02 | < 0.005 | 0.01 | 0.01 | — | 12.8 | 12.8 | < 0.005 | < 0.005 | < 0.005 | 12.9 |

## 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. | 0.88 | 1.38 | 0.48 | 6.57 | 0.01 | 0.02 | 0.33 | 0.35 | 0.02 | 0.06 | 0.08 | 23.4 | 1,818 | 1,841 | 1.49 | 0.06 | 3.27 | 1,898 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mit. | 0.88 | 1.38 | 0.48 | 6.57 | 0.01 | 0.02 | 0.33 | 0.35 | 0.02 | 0.06 | 0.08 | 22.4 | 1,816 | 1,839 | 1.48 | 0.05 | 3.27 | 1,895 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | 4% | < 0.5% | < 0.5% | < 0.5% | 4% | — | < 0.5% |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.61 | 1.13 | 0.54 | 4.70 | 0.01 | 0.02 | 0.33 | 0.35 | 0.02 | 0.06 | 0.08 | 23.4 | 1,714 | 1,737 | 1.49 | 0.06 | 0.15 | 1,792 |
| Mit. | 0.61 | 1.13 | 0.54 | 4.70 | 0.01 | 0.02 | 0.33 | 0.35 | 0.02 | 0.06 | 0.08 | 22.4 | 1,712 | 1,735 | 1.49 | 0.06 | 0.15 | 1,789 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | 4% | < 0.5% | < 0.5% | < 0.5% | 4% | — | < 0.5% |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.54 | 1.07 | 0.43 | 3.91 | 0.01 | 0.02 | 0.23 | 0.25 | 0.02 | 0.04 | 0.06 | 23.4 | 1,504 | 1,527 | 1.48 | 0.05 | 1.05 | 1,580 |
| Mit. | 0.54 | 1.07 | 0.43 | 3.91 | 0.01 | 0.02 | 0.23 | 0.25 | 0.02 | 0.04 | 0.06 | 22.4 | 1,502 | 1,525 | 1.47 | 0.05 | 1.05 | 1,577 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | 4% | < 0.5% | < 0.5% | < 0.5% | 4% | — | < 0.5% |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.10 | 0.19 | 0.08 | 0.71 | < 0.005 | < 0.005 | 0.04 | 0.05 | < 0.005 | 0.01 | 0.01 | 3.87 | 249 | 253 | 0.24 | 0.01 | 0.17 | 262 |
| Mit. | 0.10 | 0.19 | 0.08 | 0.71 | < 0.005 | < 0.005 | 0.04 | 0.05 | < 0.005 | 0.01 | 0.01 | 3.71 | 249 | 252 | 0.24 | 0.01 | 0.17 | 261 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | 4% | < 0.5% | < 0.5% | < 0.5% | 4% | — | < 0.5% |

## 2.6. Operations Emissions by Sector, Mitigated

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 | 0.65 | 0.60 | 0.25 | 5.23 | 0.01 | < 0.005 | 0.33 | 0.33 | < 0.005 | 0.06 | 0.06 | — | 894 | 894 | 0.04 | 0.03 | 3.21 | 906 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Area | 0.21 | 0.77 | 0.01 | 1.15 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 4.74 | 4.74 | < 0.005 | < 0.005 | — | 4.88 |
| Energy | 0.02 | 0.01 | 0.23 | 0.19 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 903 | 903 | 0.08 | 0.01 | — | 907 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 9.08 | 14.8 | 23.9 | 0.03 | 0.02 | — | 30.7 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 13.3 | 0.00 | 13.3 | 1.33 | 0.00 | — | 46.5 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.06 | 0.06 |
| Total | 0.88 | 1.38 | 0.48 | 6.57 | 0.01 | 0.02 | 0.33 | 0.35 | 0.02 | 0.06 | 0.08 | 22.4 | 1,816 | 1,839 | 1.48 | 0.05 | 3.27 | 1,895 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.59 | 0.54 | 0.31 | 4.51 | 0.01 | < 0.005 | 0.33 | 0.33 | < 0.005 | 0.06 | 0.06 | — | 795 | 795 | 0.05 | 0.03 | 0.08 | 805 |
| Area | — | 0.58 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Energy | 0.02 | 0.01 | 0.23 | 0.19 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 903 | 903 | 0.08 | 0.01 | — | 907 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 9.08 | 14.8 | 23.9 | 0.03 | 0.02 | — | 30.7 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 13.3 | 0.00 | 13.3 | 1.33 | 0.00 | — | 46.5 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.06 | 0.06 |
| Total | 0.61 | 1.13 | 0.54 | 4.70 | 0.01 | 0.02 | 0.33 | 0.35 | 0.02 | 0.06 | 0.08 | 22.4 | 1,712 | 1,735 | 1.49 | 0.06 | 0.15 | 1,789 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.42 | 0.38 | 0.20 | 3.15 | 0.01 | < 0.005 | 0.23 | 0.24 | < 0.005 | 0.04 | 0.04 | — | 582 | 582 | 0.03 | 0.02 | 0.99 | 590 |
| Area | 0.10 | 0.67 | < 0.005 | 0.57 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.34 | 2.34 | < 0.005 | < 0.005 | — | 2.41 |
| Energy | 0.02 | 0.01 | 0.23 | 0.19 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 903 | 903 | 0.08 | 0.01 | — | 907 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 9.08 | 14.8 | 23.9 | 0.03 | 0.02 | — | 30.7 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 13.3 | 0.00 | 13.3 | 1.33 | 0.00 | — | 46.5 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.06 | 0.06 |
| Total | 0.54 | 1.07 | 0.43 | 3.91 | 0.01 | 0.02 | 0.23 | 0.25 | 0.02 | 0.04 | 0.06 | 22.4 | 1,502 | 1,525 | 1.47 | 0.05 | 1.05 | 1,577 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.08 | 0.07 | 0.04 | 0.58 | < 0.005 | < 0.005 | 0.04 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 96.4 | 96.4 | 0.01 | < 0.005 | 0.16 | 97.7 |
| Area | 0.02 | 0.12 | < 0.005 | 0.10 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.39 | 0.39 | < 0.005 | < 0.005 | — | 0.40 |
| Energy | < 0.005 | < 0.005 | 0.04 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 149 | 149 | 0.01 | < 0.005 | — | 150 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water | — | — | — | — | — | — | — | — | — | — | — | 1.50 | 2.46 | 3.96 | 0.01 | < 0.005 | — | 5.08 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 2.20 | 0.00 | 2.20 | 0.22 | 0.00 | — | 7.70 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 |
| Total | 0.10 | 0.19 | 0.08 | 0.71 | < 0.005 | < 0.005 | 0.04 | 0.05 | < 0.005 | 0.01 | 0.01 | 3.71 | 249 | 252 | 0.24 | 0.01 | 0.17 | 261 |

# 3. Construction Emissions Details

## 3.1. Demolition (2023) - 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 | 0.39 | 0.32 | 2.36 | 2.77 | 0.01 | 0.08 | — | 0.08 | 0.07 | — | 0.07 | — | 1,398 | 1,398 | 0.06 | 0.01 | — | 1,403 |
| Demolition | — | — | — | — | — | — | 1.56 | 1.56 | — | 0.24 | 0.24 | — | — | — | — | — | — | — |
| 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 | 0.01 | < 0.005 | 0.03 | 0.04 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 19.2 | 19.2 | < 0.005 | < 0.005 | — | 19.2 |
| Demolition | — | — | — | — | — | — | 0.02 | 0.02 | — | < 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 | 0.01 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 3.17 | 3.17 | < 0.005 | < 0.005 | — | 3.18 |
| Demolition | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 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 | 0.14 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 26.3 | 26.3 | < 0.005 | < 0.005 | 0.11 | 26.7 |
| 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 | 0.02 | 0.01 | 0.64 | 0.12 | 0.01 | 0.01 | 0.03 | 0.04 | 0.01 | 0.01 | 0.02 | — | 462 | 462 | 0.01 | 0.07 | 0.95 | 485 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 0.33 | 0.33 | < 0.005 | < 0.005 | < 0.005 | 0.33 |
| 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 | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.33 | 6.33 | < 0.005 | < 0.005 | 0.01 | 6.63 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 0.05 | 0.05 | < 0.005 | < 0.005 | < 0.005 | 0.05 |
| 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 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.05 | 1.05 | < 0.005 | < 0.005 | < 0.005 | 1.10 |

## 3.3. Demolition (2024) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.38 | 0.32 | 2.19 | 2.78 | 0.01 | 0.08 | — | 0.08 | 0.07 | — | 0.07 | — | 1,399 | 1,399 | 0.06 | 0.01 | — | 1,403 |
| Demolition | — | — | — | — | — | — | 1.40 | 1.40 | — | 0.21 | 0.21 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.06 | 0.08 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 38.3 | 38.3 | < 0.005 | < 0.005 | — | 38.5 |
| Demolition | — | — | — | — | — | — | 0.04 | 0.04 | — | 0.01 | 0.01 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 6.34 | 6.34 | < 0.005 | < 0.005 | — | 6.37 |
| Demolition | — | — | — | — | — | — | 0.01 | 0.01 | — | < 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.09 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 22.8 | 22.8 | < 0.005 | < 0.005 | < 0.005 | 23.1 |
| 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 | 0.02 | 0.01 | 0.66 | 0.11 | 0.01 | 0.01 | 0.03 | 0.04 | 0.01 | 0.01 | 0.02 | — | 454 | 454 | 0.01 | 0.07 | 0.02 | 476 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 0.64 | 0.64 | < 0.005 | < 0.005 | < 0.005 | 0.65 |
| 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 | < 0.005 | < 0.005 | 0.02 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 12.4 | 12.4 | < 0.005 | < 0.005 | 0.01 | 13.0 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 0.11 | 0.11 | < 0.005 | < 0.005 | < 0.005 | 0.11 |
| 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 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.06 | 2.06 | < 0.005 | < 0.005 | < 0.005 | 2.16 |

## 3.5. Demolition (2024) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.46 | 0.39 | 3.12 | 4.36 | 0.02 | 0.10 | — | 0.10 | 0.10 | — | 0.10 | — | 1,655 | 1,655 | 0.07 | 0.01 | — | 1,660 |
| Demolition | — | — | — | — | — | — | 0.24 | 0.24 | — | 0.04 | 0.04 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.02 | 0.17 | 0.24 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 90.7 | 90.7 | < 0.005 | < 0.005 | — | 91.0 |
| Demolition | — | — | — | — | — | — | 0.01 | 0.01 | — | < 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 | 0.03 | 0.04 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 15.0 | 15.0 | < 0.005 | < 0.005 | — | 15.1 |
| Demolition | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.19 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 45.6 | 45.6 | < 0.005 | < 0.005 | 0.01 | 46.2 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.02 | 0.01 | 0.66 | 0.11 | 0.01 | 0.01 | 0.03 | 0.04 | 0.01 | 0.01 | 0.02 | — | 454 | 454 | 0.01 | 0.07 | 0.02 | 476 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 2.57 | 2.57 | < 0.005 | < 0.005 | < 0.005 | 2.60 |
| 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 | < 0.005 | < 0.005 | 0.04 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 24.9 | 24.9 | < 0.005 | < 0.005 | 0.02 | 26.1 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 0.42 | 0.42 | < 0.005 | < 0.005 | < 0.005 | 0.43 |
| 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 | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 4.12 | 4.12 | < 0.005 | < 0.005 | < 0.005 | 4.32 |

## 3.7. Site Preparation (2023) - 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 | 0.77 | 0.64 | 7.03 | 3.74 | 0.01 | 0.31 | — | 0.31 | 0.29 | — | 0.29 | — | 754 | 754 | 0.03 | 0.01 | — | 756 |
| Dust From Material Movement | — | — | — | — | — | — | 2.56 | 2.56 | — | 1.31 | 1.31 | — | — | — | — | — | — | — |
| 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 | 0.02 | 0.27 | 0.14 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 28.9 | 28.9 | < 0.005 | < 0.005 | — | 29.0 |
| Dust From Material Movement | — | — | — | — | — | — | 0.10 | 0.10 | — | 0.05 | 0.05 | — | — | — | — | — | — | — |
| 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 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 4.79 | 4.79 | < 0.005 | < 0.005 | — | 4.80 |
| Dust From Material Movement | — | — | — | — | — | — | 0.02 | 0.02 | — | 0.01 | 0.01 | — | — | — | — | — | — | — |
| 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 | 0.14 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 26.3 | 26.3 | < 0.005 | < 0.005 | 0.11 | 26.7 |
| Vendor | 0.01 | < 0.005 | 0.16 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 108 | 108 | < 0.005 | 0.02 | 0.28 | 113 |
| 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 | 0.00 | 0.00 | — | 0.91 | 0.91 | < 0.005 | < 0.005 | < 0.005 | 0.93 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 4.15 | 4.15 | < 0.005 | < 0.005 | < 0.005 | 4.35 |
| 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 | 0.00 | 0.00 | — | 0.15 | 0.15 | < 0.005 | < 0.005 | < 0.005 | 0.15 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.69 | 0.69 | < 0.005 | < 0.005 | < 0.005 | 0.72 |
| 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. Grading (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.15 | 0.97 | 9.38 | 6.51 | 0.02 | 0.39 | — | 0.39 | 0.36 | — | 0.36 | — | 2,152 | 2,152 | 0.09 | 0.02 | — | 2,159 |
| Dust From Material Movement | — | — | — | — | — | — | 2.56 | 2.56 | — | 1.31 | 1.31 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.06 | 0.05 | 0.51 | 0.36 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 118 | 118 | < 0.005 | < 0.005 | — | 118 |
| Dust From Material Movement | — | — | — | — | — | — | 0.14 | 0.14 | — | 0.07 | 0.07 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.09 | 0.07 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 19.5 | 19.5 | < 0.005 | < 0.005 | — | 19.6 |
| Dust From Material Movement | — | — | — | — | — | — | 0.03 | 0.03 | — | 0.01 | 0.01 | — | — | — | — | — | — | — |
| 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 | 0.02 | 0.02 | 0.01 | 0.28 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 52.6 | 52.6 | < 0.005 | < 0.005 | 0.22 | 53.4 |
| Vendor | 0.01 | < 0.005 | 0.16 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 108 | 108 | < 0.005 | 0.02 | 0.28 | 113 |
| Hauling | 0.03 | 0.02 | 1.02 | 0.19 | 0.01 | 0.01 | 0.05 | 0.06 | 0.01 | 0.02 | 0.03 | — | 739 | 739 | 0.01 | 0.12 | 1.51 | 775 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 2.61 | 2.61 | < 0.005 | < 0.005 | 0.01 | 2.65 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 5.93 | 5.93 | < 0.005 | < 0.005 | 0.01 | 6.21 |
| Hauling | < 0.005 | < 0.005 | 0.06 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 40.5 | 40.5 | < 0.005 | 0.01 | 0.04 | 42.4 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 0.43 | 0.43 | < 0.005 | < 0.005 | < 0.005 | 0.44 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.98 | 0.98 | < 0.005 | < 0.005 | < 0.005 | 1.03 |
| Hauling | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.70 | 6.70 | < 0.005 | < 0.005 | 0.01 | 7.03 |

## 3.11. Grading (2024) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 1.27 | 1.07 | 10.4 | 8.17 | 0.02 | 0.44 | — | 0.44 | 0.41 | — | 0.41 | — | 2,152 | 2,152 | 0.09 | 0.02 | — | 2,160 |
| Dust From Material Movement | — | — | — | — | — | — | 2.56 | 2.56 | — | 1.31 | 1.31 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.04 | 0.34 | 0.27 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 70.8 | 70.8 | < 0.005 | < 0.005 | — | 71.0 |
| Dust From Material Movement | — | — | — | — | — | — | 0.08 | 0.08 | — | 0.04 | 0.04 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.06 | 0.05 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 11.7 | 11.7 | < 0.005 | < 0.005 | — | 11.8 |
| Dust From Material Movement | — | — | — | — | — | — | 0.02 | 0.02 | — | 0.01 | 0.01 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.19 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 45.6 | 45.6 | < 0.005 | < 0.005 | 0.01 | 46.2 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | < 0.005 | < 0.005 | 0.16 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 107 | 107 | < 0.005 | 0.02 | 0.01 | 112 |
| Hauling | 0.09 | 0.06 | 3.99 | 0.69 | 0.03 | 0.05 | 0.19 | 0.24 | 0.05 | 0.06 | 0.11 | — | 2,739 | 2,739 | 0.04 | 0.42 | 0.15 | 2,867 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 1.54 | 1.54 | < 0.005 | < 0.005 | < 0.005 | 1.56 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.51 | 3.51 | < 0.005 | < 0.005 | < 0.005 | 3.68 |
| Hauling | < 0.005 | < 0.005 | 0.13 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 90.0 | 90.0 | < 0.005 | 0.01 | 0.08 | 94.3 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 0.25 | 0.25 | < 0.005 | < 0.005 | < 0.005 | 0.26 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.58 | 0.58 | < 0.005 | < 0.005 | < 0.005 | 0.61 |
| Hauling | < 0.005 | < 0.005 | 0.02 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 14.9 | 14.9 | < 0.005 | < 0.005 | 0.01 | 15.6 |

## 3.13. Grading (2024) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.48 | 1.25 | 12.6 | 15.0 | 0.02 | 0.57 | — | 0.57 | 0.53 | — | 0.53 | — | 2,444 | 2,444 | 0.10 | 0.02 | — | 2,453 |
| Dust From Material Movement | — | — | — | — | — | — | 2.56 | 2.56 | — | 1.31 | 1.31 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.08 | 0.84 | 1.00 | < 0.005 | 0.04 | — | 0.04 | 0.03 | — | 0.03 | — | 163 | 163 | 0.01 | < 0.005 | — | 163 |
| Dust From Material Movement | — | — | — | — | — | — | 0.17 | 0.17 | — | 0.09 | 0.09 | — | — | — | — | — | — | — |
| 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 | 0.02 | 0.02 | 0.15 | 0.18 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 26.9 | 26.9 | < 0.005 | < 0.005 | — | 27.0 |
| Dust From Material Movement | — | — | — | — | — | — | 0.03 | 0.03 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.04 | 0.04 | 0.04 | 0.47 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | — | 114 | 114 | < 0.005 | < 0.005 | 0.01 | 115 |
| Vendor | 0.01 | 0.01 | 0.32 | 0.08 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | 0.01 | — | 214 | 214 | < 0.005 | 0.03 | 0.01 | 224 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 7.79 | 7.79 | < 0.005 | < 0.005 | 0.01 | 7.90 |
| Vendor | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 14.2 | 14.2 | < 0.005 | < 0.005 | 0.02 | 14.9 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 1.29 | 1.29 | < 0.005 | < 0.005 | < 0.005 | 1.31 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.35 | 2.35 | < 0.005 | < 0.005 | < 0.005 | 2.46 |
| 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 |

## 3.15. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.27 | 1.06 | 10.2 | 13.2 | 0.02 | 0.46 | — | 0.46 | 0.42 | — | 0.42 | — | 2,444 | 2,444 | 0.10 | 0.02 | — | 2,452 |
| Dust From Material Movement | — | — | — | — | — | — | 2.56 | 2.56 | — | 1.31 | 1.31 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.03 | 0.26 | 0.34 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 62.2 | 62.2 | < 0.005 | < 0.005 | — | 62.4 |
| Dust From Material Movement | — | — | — | — | — | — | 0.07 | 0.07 | — | 0.03 | 0.03 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 0.06 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 10.3 | 10.3 | < 0.005 | < 0.005 | — | 10.3 |
| Dust From Material Movement | — | — | — | — | — | — | 0.01 | 0.01 | — | 0.01 | 0.01 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.04 | 0.04 | 0.03 | 0.44 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | — | 112 | 112 | < 0.005 | < 0.005 | 0.01 | 113 |
| Vendor | 0.01 | 0.01 | 0.31 | 0.08 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | 0.01 | — | 210 | 210 | < 0.005 | 0.03 | 0.01 | 219 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 2.92 | 2.92 | < 0.005 | < 0.005 | < 0.005 | 2.96 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 5.34 | 5.34 | < 0.005 | < 0.005 | 0.01 | 5.59 |
| 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 | 0.00 | 0.00 | — | 0.48 | 0.48 | < 0.005 | < 0.005 | < 0.005 | 0.49 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.88 | 0.88 | < 0.005 | < 0.005 | < 0.005 | 0.92 |
| 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 |

## 3.17. Building Construction (2023) - 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 | 0.10 | 0.09 | 0.75 | 1.12 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 186 | 186 | 0.01 | < 0.005 | — | 187 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.09 | 0.75 | 1.12 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 186 | 186 | 0.01 | < 0.005 | — | 187 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.03 | 0.22 | 0.34 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 55.7 | 55.7 | < 0.005 | < 0.005 | — | 55.9 |
| 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 | 0.04 | 0.06 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 9.22 | 9.22 | < 0.005 | < 0.005 | — | 9.26 |
| 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 | 0.04 | 0.03 | 0.02 | 0.47 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 89.3 | 89.3 | < 0.005 | < 0.005 | 0.37 | 90.6 |
| Vendor | 0.01 | < 0.005 | 0.17 | 0.05 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 118 | 118 | < 0.005 | 0.02 | 0.30 | 123 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.03 | 0.35 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 78.8 | 78.8 | < 0.005 | < 0.005 | 0.01 | 79.8 |
| Vendor | 0.01 | < 0.005 | 0.18 | 0.05 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 118 | 118 | < 0.005 | 0.02 | 0.01 | 123 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.11 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 24.2 | 24.2 | < 0.005 | < 0.005 | 0.05 | 24.6 |
| Vendor | < 0.005 | < 0.005 | 0.05 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 35.2 | 35.2 | < 0.005 | 0.01 | 0.04 | 36.9 |
| 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 | 0.02 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 4.01 | 4.01 | < 0.005 | < 0.005 | 0.01 | 4.07 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 5.83 | 5.83 | < 0.005 | < 0.005 | 0.01 | 6.10 |
| 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 |

## 3.19. Building Construction (2024) - 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 | 0.09 | 0.08 | 0.66 | 1.12 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 186 | 186 | 0.01 | < 0.005 | — | 187 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.09 | 0.08 | 0.66 | 1.12 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 186 | 186 | 0.01 | < 0.005 | — | 187 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.05 | 0.04 | 0.34 | 0.58 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 97.2 | 97.2 | < 0.005 | < 0.005 | — | 97.6 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.06 | 0.11 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 16.1 | 16.1 | < 0.005 | < 0.005 | — | 16.2 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.02 | 0.43 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 87.6 | 87.6 | < 0.005 | < 0.005 | 0.34 | 89.0 |
| Vendor | 0.01 | < 0.005 | 0.16 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 116 | 116 | < 0.005 | 0.02 | 0.30 | 122 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.03 | 0.32 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 77.4 | 77.4 | < 0.005 | < 0.005 | 0.01 | 78.4 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.01 | < 0.005 | 0.18 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 116 | 116 | < 0.005 | 0.02 | 0.01 | 121 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.01 | 0.17 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 41.6 | 41.6 | < 0.005 | < 0.005 | 0.08 | 42.1 |
| Vendor | < 0.005 | < 0.005 | 0.09 | 0.02 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 60.7 | 60.7 | < 0.005 | 0.01 | 0.07 | 63.5 |
| 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 | 0.03 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 6.88 | 6.88 | < 0.005 | < 0.005 | 0.01 | 6.98 |
| Vendor | < 0.005 | < 0.005 | 0.02 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 10.0 | 10.0 | < 0.005 | < 0.005 | 0.01 | 10.5 |
| 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 |

## 3.21. Paving (2024) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.85 | 0.72 | 6.79 | 11.3 | 0.02 | 0.28 | — | 0.28 | 0.26 | — | 0.26 | — | 2,572 | 2,572 | 0.10 | 0.02 | — | 2,580 |
| Paving | — | 1.14 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 0.01 | 0.01 | 0.06 | 0.09 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 21.1 | 21.1 | < 0.005 | < 0.005 | — | 21.2 |
| Paving | — | 0.01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.01 | 0.02 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 3.50 | 3.50 | < 0.005 | < 0.005 | — | 3.51 |
| Paving | — | < 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.04 | 0.04 | 0.04 | 0.47 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | — | 114 | 114 | < 0.005 | < 0.005 | 0.01 | 115 |
| 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 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 0.96 | 0.96 | < 0.005 | < 0.005 | < 0.005 | 0.98 |
| 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 | 0.00 | 0.00 | — | 0.16 | 0.16 | < 0.005 | < 0.005 | < 0.005 | 0.16 |
| 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 |

## 3.23. Architectural Coating (2024) - 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 | 0.17 | 0.14 | 0.91 | 1.15 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | — | 0.18 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.17 | 0.14 | 0.91 | 1.15 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | — | 0.18 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.05 | 0.04 | 0.26 | 0.33 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 38.0 | 38.0 | < 0.005 | < 0.005 | — | 38.2 |
| Architectural Coatings | — | 0.05 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.05 | 0.06 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 6.30 | 6.30 | < 0.005 | < 0.005 | — | 6.32 |
| Architectural Coatings | — | 0.01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 | < 0.005 | 0.09 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 17.5 | 17.5 | < 0.005 | < 0.005 | 0.07 | 17.8 |
| 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.06 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 15.5 | 15.5 | < 0.005 | < 0.005 | < 0.005 | 15.7 |
| 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 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 4.53 | 4.53 | < 0.005 | < 0.005 | 0.01 | 4.60 |
| 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 | 0.00 | 0.00 | — | 0.75 | 0.75 | < 0.005 | < 0.005 | < 0.005 | 0.76 |
| 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 |

## 3.25. Trenching (2023) - 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 | 0.68 | 0.57 | 4.30 | 5.29 | 0.02 | 0.17 | — | 0.17 | 0.15 | — | 0.15 | — | 1,866 | 1,866 | 0.08 | 0.02 | — | 1,872 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.68 | 0.57 | 4.30 | 5.29 | 0.02 | 0.17 | — | 0.17 | 0.15 | — | 0.15 | — | 1,866 | 1,866 | 0.08 | 0.02 | — | 1,872 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.20 | 0.16 | 1.24 | 1.52 | 0.01 | 0.05 | — | 0.05 | 0.04 | — | 0.04 | — | 537 | 537 | 0.02 | < 0.005 | — | 539 |
| 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 | 0.04 | 0.03 | 0.23 | 0.28 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 88.8 | 88.8 | < 0.005 | < 0.005 | — | 89.2 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.02 | 0.41 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 78.9 | 78.9 | < 0.005 | < 0.005 | 0.33 | 80.1 |
| Vendor | 0.01 | 0.01 | 0.24 | 0.06 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | 0.01 | — | 162 | 162 | < 0.005 | 0.02 | 0.42 | 170 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.03 | 0.31 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 69.6 | 69.6 | < 0.005 | < 0.005 | 0.01 | 70.5 |
| Vendor | 0.01 | 0.01 | 0.25 | 0.07 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | 0.01 | — | 162 | 162 | < 0.005 | 0.02 | 0.01 | 170 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.09 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 20.6 | 20.6 | < 0.005 | < 0.005 | 0.04 | 20.9 |
| Vendor | < 0.005 | < 0.005 | 0.07 | 0.02 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 46.7 | 46.7 | < 0.005 | 0.01 | 0.05 | 48.9 |
| 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 | 0.02 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 3.41 | 3.41 | < 0.005 | < 0.005 | 0.01 | 3.46 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 7.74 | 7.74 | < 0.005 | < 0.005 | 0.01 | 8.09 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.27. Trenching (2024) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.67 | 0.56 | 4.04 | 5.31 | 0.02 | 0.16 | — | 0.16 | 0.14 | — | 0.14 | — | 1,866 | 1,866 | 0.08 | 0.02 | — | 1,873 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.02 | 0.17 | 0.22 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 76.7 | 76.7 | < 0.005 | < 0.005 | — | 77.0 |
| 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 | 0.03 | 0.04 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 12.7 | 12.7 | < 0.005 | < 0.005 | — | 12.7 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.02 | 0.02 | 0.28 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 68.4 | 68.4 | < 0.005 | < 0.005 | 0.01 | 69.3 |
| Vendor | 0.01 | < 0.005 | 0.24 | 0.06 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | 0.01 | — | 160 | 160 | < 0.005 | 0.02 | 0.01 | 168 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 2.89 | 2.89 | < 0.005 | < 0.005 | 0.01 | 2.93 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.58 | 6.58 | < 0.005 | < 0.005 | 0.01 | 6.89 |
| 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 | 0.00 | 0.00 | — | 0.48 | 0.48 | < 0.005 | < 0.005 | < 0.005 | 0.48 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.09 | 1.09 | < 0.005 | < 0.005 | < 0.005 | 1.14 |
| 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 |

## 3.29. Trenching (2024) - 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 | 0.66 | 0.55 | 3.85 | 2.01 | < 0.005 | 0.38 | — | 0.38 | 0.35 | — | 0.35 | — | 256 | 256 | 0.01 | < 0.005 | — | 257 |
| 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 | 0.10 | 0.09 | 0.60 | 0.31 | < 0.005 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 40.0 | 40.0 | < 0.005 | < 0.005 | — | 40.2 |
| 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 | 0.02 | 0.02 | 0.11 | 0.06 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 6.62 | 6.62 | < 0.005 | < 0.005 | — | 6.65 |
| 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 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 25.8 | 25.8 | < 0.005 | < 0.005 | 0.10 | 26.2 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 3.66 | 3.66 | < 0.005 | < 0.005 | 0.01 | 3.71 |
| 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 | 0.00 | 0.00 | — | 0.61 | 0.61 | < 0.005 | < 0.005 | < 0.005 | 0.61 |
| 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 |

## 3.31. Trenching (2024) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.66 | 0.55 | 3.85 | 2.01 | < 0.005 | 0.38 | — | 0.38 | 0.35 | — | 0.35 | — | 256 | 256 | 0.01 | < 0.005 | — | 257 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.04 | 0.26 | 0.13 | < 0.005 | 0.03 | — | 0.03 | 0.02 | — | 0.02 | — | 17.0 | 17.0 | < 0.005 | < 0.005 | — | 17.1 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.05 | 0.02 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.82 | 2.82 | < 0.005 | < 0.005 | — | 2.83 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.09 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 22.8 | 22.8 | < 0.005 | < 0.005 | < 0.005 | 23.1 |
| 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 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 1.56 | 1.56 | < 0.005 | < 0.005 | < 0.005 | 1.58 |
| 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 | 0.00 | 0.00 | — | 0.26 | 0.26 | < 0.005 | < 0.005 | < 0.005 | 0.26 |
| 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 |

## 3.33. Trenching (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.01 | 0.85 | 7.05 | 2.86 | < 0.005 | 0.47 | — | 0.47 | 0.44 | — | 0.44 | — | 258 | 258 | 0.01 | < 0.005 | — | 259 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.02 | 0.18 | 0.07 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 6.57 | 6.57 | < 0.005 | < 0.005 | — | 6.60 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 1.09 | 1.09 | < 0.005 | < 0.005 | — | 1.09 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.01 | 0.01 | 0.01 | 0.09 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 22.3 | 22.3 | < 0.005 | < 0.005 | < 0.005 | 22.6 |
| 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 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | 0.00 | 0.00 | — | 0.58 | 0.58 | < 0.005 | < 0.005 | < 0.005 | 0.59 |
| 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 | 0.00 | 0.00 | — | 0.10 | 0.10 | < 0.005 | < 0.005 | < 0.005 | 0.10 |
| 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 |

# 4. Operations Emissions Details

## 4.1. Mobile Emissions by Land Use

### 4.1.2. Mitigated

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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | 0.65 | 0.60 | 0.25 | 5.23 | 0.01 | < 0.005 | 0.33 | 0.33 | < 0.005 | 0.06 | 0.06 | — | 894 | 894 | 0.04 | 0.03 | 3.21 | 906 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.65 | 0.60 | 0.25 | 5.23 | 0.01 | < 0.005 | 0.33 | 0.33 | < 0.005 | 0.06 | 0.06 | — | 894 | 894 | 0.04 | 0.03 | 3.21 | 906 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | 0.59 | 0.54 | 0.31 | 4.51 | 0.01 | < 0.005 | 0.33 | 0.33 | < 0.005 | 0.06 | 0.06 | — | 795 | 795 | 0.05 | 0.03 | 0.08 | 805 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.59 | 0.54 | 0.31 | 4.51 | 0.01 | < 0.005 | 0.33 | 0.33 | < 0.005 | 0.06 | 0.06 | — | 795 | 795 | 0.05 | 0.03 | 0.08 | 805 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | 0.08 | 0.07 | 0.04 | 0.58 | < 0.005 | < 0.005 | 0.04 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 96.4 | 96.4 | 0.01 | < 0.005 | 0.16 | 97.7 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.08 | 0.07 | 0.04 | 0.58 | < 0.005 | < 0.005 | 0.04 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 96.4 | 96.4 | 0.01 | < 0.005 | 0.16 | 97.7 |

## 4.2. Energy

### 4.2.2. Electricity Emissions By Land Use - Mitigated

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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | 580 | 580 | 0.05 | 0.01 | — | 583 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 53.5 | 53.5 | < 0.005 | < 0.005 | — | 53.7 |
| Other Non-Asphalt Surfaces | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 633 | 633 | 0.05 | 0.01 | — | 637 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | 580 | 580 | 0.05 | 0.01 | — | 583 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 53.5 | 53.5 | < 0.005 | < 0.005 | — | 53.7 |
| Other Non-Asphalt Surfaces | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 633 | 633 | 0.05 | 0.01 | — | 637 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | 96.0 | 96.0 | 0.01 | < 0.005 | — | 96.5 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 8.85 | 8.85 | < 0.005 | < 0.005 | — | 8.90 |
| Other Non-Asphalt Surfaces | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 105 | 105 | 0.01 | < 0.005 | — | 105 |

## 4.2.4. Natural Gas Emissions By Land Use - Mitigated

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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | 0.02 | 0.01 | 0.23 | 0.19 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 269 | 269 | 0.02 | < 0.005 | — | 270 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 0.02 | 0.01 | 0.23 | 0.19 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 269 | 269 | 0.02 | < 0.005 | — | 270 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | 0.02 | 0.01 | 0.23 | 0.19 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 269 | 269 | 0.02 | < 0.005 | — | 270 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 0.02 | 0.01 | 0.23 | 0.19 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 269 | 269 | 0.02 | < 0.005 | — | 270 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | < 0.005 | < 0.005 | 0.04 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 44.6 | 44.6 | < 0.005 | < 0.005 | — | 44.7 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | < 0.005 | < 0.005 | 0.04 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 44.6 | 44.6 | < 0.005 | < 0.005 | — | 44.7 |

## 4.3. Area Emissions by Source

### 4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Source | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Consumer Products | — | 0.57 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | — | 0.01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 0.21 | 0.19 | 0.01 | 1.15 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 4.74 | 4.74 | < 0.005 | < 0.005 | — | 4.88 |
| Total | 0.21 | 0.77 | 0.01 | 1.15 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 4.74 | 4.74 | < 0.005 | < 0.005 | — | 4.88 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Consumer Products | — | 0.57 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | — | 0.01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | 0.58 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Consumer Products | — | 0.10 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | — | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 0.02 | 0.02 | < 0.005 | 0.10 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.39 | 0.39 | < 0.005 | < 0.005 | — | 0.40 |
| Total | 0.02 | 0.12 | < 0.005 | 0.10 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.39 | 0.39 | < 0.005 | < 0.005 | — | 0.40 |

## 4.4. Water Emissions by Land Use

### 4.4.1. Mitigated

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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 9.08 | 14.8 | 23.9 | 0.03 | 0.02 | — | 30.7 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Other Non-Asphalt Surfaces | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 9.08 | 14.8 | 23.9 | 0.03 | 0.02 | — | 30.7 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 9.08 | 14.8 | 23.9 | 0.03 | 0.02 | — | 30.7 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Other Non-Asphalt Surfaces | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 9.08 | 14.8 | 23.9 | 0.03 | 0.02 | — | 30.7 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 1.50 | 2.46 | 3.96 | 0.01 | < 0.005 | — | 5.08 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Other Non-Asphalt Surfaces | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 1.50 | 2.46 | 3.96 | 0.01 | < 0.005 | — | 5.08 |

## 4.5. Waste Emissions by Land Use

### 4.5.1. Mitigated

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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 13.3 | 0.00 | 13.3 | 1.33 | 0.00 | — | 46.5 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Other Non-Asphalt Surfaces | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 13.3 | 0.00 | 13.3 | 1.33 | 0.00 | — | 46.5 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 13.3 | 0.00 | 13.3 | 1.33 | 0.00 | — | 46.5 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Other Non-Asphalt Surfaces | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 13.3 | 0.00 | 13.3 | 1.33 | 0.00 | — | 46.5 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 2.20 | 0.00 | 2.20 | 0.22 | 0.00 | — | 7.70 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Other Non-Asphalt Surfaces | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 2.20 | 0.00 | 2.20 | 0.22 | 0.00 | — | 7.70 |

## 4.6. Refrigerant Emissions by Land Use

### 4.6.2. Mitigated

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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.06 | 0.06 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.06 | 0.06 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.06 | 0.06 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.06 | 0.06 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 |

## 4.7. Offroad Emissions By Equipment Type

### 4.7.2. Mitigated

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 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| Equipment Type | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| P1 Asphalt Demolition | Demolition | 6/21/2023 | 6/27/2023 | 5.00 | 5.00 | — |
| P2 Asphalt Demolition | Demolition | 10/31/2024 | 11/13/2024 | 5.00 | 10.0 | — |
| Building Demolition | Demolition | 10/10/2024 | 11/6/2024 | 5.00 | 20.0 | — |
| Site Preparation | Site Preparation | 6/1/2023 | 6/20/2023 | 5.00 | 14.0 | — |
| P1 Rough Grading | Grading | 7/19/2023 | 8/15/2023 | 5.00 | 20.0 | — |
| P2 Rough Grading | Grading | 11/13/2024 | 11/28/2024 | 5.00 | 12.0 | — |
| Fine Grading | Grading | 11/28/2024 | 1/13/2025 | 5.00 | 33.0 | — |
| Building Construction | Building Construction | 8/1/2023 | 9/23/2024 | 5.00 | 300 | — |
| Paving | Paving | 12/26/2024 | 12/30/2024 | 5.00 | 3.00 | — |
| Architectural Coating | Architectural Coating | 3/1/2024 | 7/24/2024 | 5.00 | 104 | — |
| P1 Utility Trenching | Trenching | 6/28/2023 | 11/21/2023 | 5.00 | 105 | — |

| | | | | | | |
|---|---|---|---|---|---|---|
| P2 Utility Trenching | Trenching | 11/7/2024 | 11/27/2024 | 5.00 | 15.0 | — |
| P1 Landscaping/Finishing | Trenching | 5/31/2024 | 8/19/2024 | 5.00 | 57.0 | — |
| P2 Landscaping/Finishing | Trenching | 11/28/2024 | 1/13/2025 | 5.00 | 33.0 | — |

## 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 |
|---|---|---|---|---|---|---|---|
| P1 Asphalt Demolition | Excavators | Diesel | Average | 1.00 | 8.00 | 396 | 0.38 |
| Site Preparation | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 202 | 0.40 |
| P1 Rough Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 202 | 0.40 |
| P2 Asphalt Demolition | Excavators | Diesel | Average | 1.00 | 8.00 | 396 | 0.38 |
| Building Demolition | Excavators | Diesel | Average | 1.00 | 8.00 | 396 | 0.38 |
| Building Demolition | Skid Steer Loaders | Diesel | Average | 1.00 | 8.00 | 74.3 | 0.37 |
| P1 Rough Grading | Excavators | Diesel | Average | 1.00 | 8.00 | 396 | 0.38 |
| P2 Rough Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 202 | 0.40 |
| P2 Rough Grading | Excavators | Diesel | Average | 1.00 | 8.00 | 396 | 0.38 |
| Fine Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 202 | 0.40 |
| Fine Grading | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 100 | 0.37 |
| Fine Grading | Rollers | Diesel | Average | 2.00 | 8.00 | 142 | 0.38 |
| Building Construction | Forklifts | Diesel | Average | 1.00 | 8.00 | 100 | 0.20 |
| Paving | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 100 | 0.37 |
| Paving | Pavers | Diesel | Average | 1.00 | 8.00 | 225 | 0.42 |
| Paving | Rollers | Diesel | Average | 2.00 | 8.00 | 142 | 0.38 |
| Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |
| P1 Utility Trenching | Excavators | Diesel | Average | 1.00 | 8.00 | 396 | 0.38 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| P1 Utility Trenching | Tractors/Loaders/Backh | Diesel | Average | 1.00 | 8.00 | 100 | 0.37 |
| P1 Utility Trenching | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 23.0 | 0.36 |
| P2 Utility Trenching | Excavators | Diesel | Average | 1.00 | 8.00 | 396 | 0.38 |
| P2 Utility Trenching | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 100 | 0.37 |
| P2 Utility Trenching | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 23.0 | 0.36 |
| P1 Landscaping/Finishing | Skid Steer Loaders | Diesel | Average | 1.00 | 8.00 | 75.0 | 0.37 |
| P2 Landscaping/Finishing | Skid Steer Loaders | Diesel | Average | 1.00 | 8.00 | 75.0 | 0.37 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| P1 Asphalt Demolition | — | — | — | — |
| P1 Asphalt Demolition | Worker | 2.50 | 12.9 | LDA,LDT1,LDT2 |
| P1 Asphalt Demolition | Vendor | — | 8.08 | HHDT,MHDT |
| P1 Asphalt Demolition | Hauling | 6.00 | 20.0 | HHDT |
| P1 Asphalt Demolition | Onsite truck | — | — | HHDT |
| Site Preparation | — | — | — | — |
| Site Preparation | Worker | 2.50 | 12.9 | LDA,LDT1,LDT2 |
| Site Preparation | Vendor | 4.00 | 8.08 | HHDT,MHDT |
| Site Preparation | Hauling | 0.00 | 20.0 | HHDT |
| Site Preparation | Onsite truck | — | — | HHDT |
| P1 Utility Trenching | — | — | — | — |
| P1 Utility Trenching | Worker | 7.50 | 12.9 | LDA,LDT1,LDT2 |
| P1 Utility Trenching | Vendor | 6.00 | 8.08 | HHDT,MHDT |

| | | | | |
|---|---|---|---|---|
| P1 Utility Trenching | Hauling | 0.00 | 20.0 | HHDT |
| P1 Utility Trenching | Onsite truck | — | — | HHDT |
| P1 Rough Grading | — | — | — | — |
| P1 Rough Grading | Worker | 5.00 | 12.9 | LDA,LDT1,LDT2 |
| P1 Rough Grading | Vendor | 4.00 | 8.08 | HHDT,MHDT |
| P1 Rough Grading | Hauling | 9.60 | 20.0 | HHDT |
| P1 Rough Grading | Onsite truck | — | — | HHDT |
| Building Construction | — | — | — | — |
| Building Construction | Worker | 8.49 | 12.9 | LDA,LDT1,LDT2 |
| Building Construction | Vendor | 4.35 | 8.08 | HHDT,MHDT |
| Building Construction | Hauling | 0.00 | 20.0 | HHDT |
| Building Construction | Onsite truck | — | — | HHDT |
| P2 Asphalt Demolition | — | — | — | — |
| P2 Asphalt Demolition | Worker | 2.50 | 12.9 | LDA,LDT1,LDT2 |
| P2 Asphalt Demolition | Vendor | — | 8.08 | HHDT,MHDT |
| P2 Asphalt Demolition | Hauling | 6.00 | 20.0 | HHDT |
| P2 Asphalt Demolition | Onsite truck | — | — | HHDT |
| Building Demolition | — | — | — | — |
| Building Demolition | Worker | 5.00 | 12.9 | LDA,LDT1,LDT2 |
| Building Demolition | Vendor | — | 8.08 | HHDT,MHDT |
| Building Demolition | Hauling | 6.00 | 20.0 | HHDT |
| Building Demolition | Onsite truck | — | — | HHDT |
| P2 Rough Grading | — | — | — | — |
| P2 Rough Grading | Worker | 5.00 | 12.9 | LDA,LDT1,LDT2 |
| P2 Rough Grading | Vendor | 4.00 | 8.08 | HHDT,MHDT |
| P2 Rough Grading | Hauling | 36.2 | 20.0 | HHDT |
| P2 Rough Grading | Onsite truck | — | — | HHDT |

| | | | | |
|---|---|---|---|---|
| Fine Grading | — | — | — | — |
| Fine Grading | Worker | 12.5 | 12.9 | LDA,LDT1,LDT2 |
| Fine Grading | Vendor | 8.00 | 8.08 | HHDT,MHDT |
| Fine Grading | Hauling | 0.00 | 20.0 | HHDT |
| Fine Grading | Onsite truck | — | — | HHDT |
| Paving | — | — | — | — |
| Paving | Worker | 12.5 | 12.9 | LDA,LDT1,LDT2 |
| Paving | Vendor | — | 8.08 | HHDT,MHDT |
| Paving | Hauling | 0.00 | 20.0 | HHDT |
| Paving | Onsite truck | — | — | HHDT |
| Architectural Coating | — | — | — | — |
| Architectural Coating | Worker | 1.70 | 12.9 | LDA,LDT1,LDT2 |
| Architectural Coating | Vendor | — | 8.08 | HHDT,MHDT |
| Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Architectural Coating | Onsite truck | — | — | HHDT |
| P2 Utility Trenching | — | — | — | — |
| P2 Utility Trenching | Worker | 7.50 | 12.9 | LDA,LDT1,LDT2 |
| P2 Utility Trenching | Vendor | 6.00 | 8.08 | HHDT,MHDT |
| P2 Utility Trenching | Hauling | 0.00 | 20.0 | HHDT |
| P2 Utility Trenching | Onsite truck | — | — | HHDT |
| P1 Landscaping/Finishing | — | — | — | — |
| P1 Landscaping/Finishing | Worker | 2.50 | 12.9 | LDA,LDT1,LDT2 |
| P1 Landscaping/Finishing | Vendor | — | 8.08 | HHDT,MHDT |
| P1 Landscaping/Finishing | Hauling | 0.00 | 20.0 | HHDT |
| P1 Landscaping/Finishing | Onsite truck | — | — | HHDT |
| P2 Landscaping/Finishing | — | — | — | — |
| P2 Landscaping/Finishing | Worker | 2.50 | 12.9 | LDA,LDT1,LDT2 |

| | | | | |
|---|---|---|---|---|
| P2 Landscaping/Finishing | Vendor | — | 8.08 | HHDT,MHDT |
| P2 Landscaping/Finishing | Hauling | 0.00 | 20.0 | HHDT |
| P2 Landscaping/Finishing | Onsite truck | — | — | 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 | 29,842 | 133 | 3,929 |

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (Cubic Yards) | Material Exported (Cubic Yards) | Acres Graded (acres) | Material Demolished (Ton of Debris) | Acres Paved (acres) |
|---|---|---|---|---|---|
| P1 Asphalt Demolition | 0.00 | 0.00 | 0.00 | 548 | — |
| P2 Asphalt Demolition | 0.00 | 0.00 | 0.00 | 978 | — |
| Building Demolition | 0.00 | 0.00 | 0.00 | 339 | — |
| Site Preparation | 0.00 | 0.00 | 7.00 | 0.00 | — |
| P1 Rough Grading | — | 1,529 | 10.0 | 0.00 | — |

| | | | | | |
|---|---|---|---|---|---|
| P2 Rough Grading | — | 3,471 | 6.00 | 0.00 | — |
| Fine Grading | — | — | 16.5 | 0.00 | — |
| Paving | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 |

### 5.6.2. Construction Earthmoving Control Strategies

| Control Strategies Applied | Frequency (per day) | PM10 Reduction | PM2.5 Reduction |
|---|---|---|---|
| Water Exposed Area | 2 | 61% | 61% |
| Water Demolished Area | 2 | 36% | 36% |

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|
| General Office Building | 0.00 | 0% |
| Parking Lot | 1.31 | 100% |
| Other Non-Asphalt Surfaces | 0.20 | 0% |

## 5.8. Construction Electricity Consumption and Emissions Factors

### kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|
| 2023 | 0.00 | 471 | 0.03 | < 0.005 |
| 2024 | 0.00 | 446 | 0.03 | < 0.005 |
| 2025 | 0.00 | 391 | 0.03 | < 0.005 |

## 5.9. Operational Mobile Sources

### 5.9.2. Mitigated

| Land Use Type | Trips/Weekday | Trips/Saturday | Trips/Sunday | Trips/Year | VMT/Weekday | VMT/Saturday | VMT/Sunday | VMT/Year |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| General Office Building | 130 | 0.00 | 0.00 | 33,892 | 1,209 | 0.00 | 0.00 | 315,285 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 5.11. Operational Energy Consumption

### 5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

| Land Use | Electricity (kWh/yr) | CO2 | CH4 | N2O | Natural Gas (kBTU/yr) |
|---|---|---|---|---|---|
| General Office Building | 540,759 | 391 | 0.0330 | 0.0040 | 840,379 |
| Parking Lot | 49,843 | 391 | 0.0330 | 0.0040 | 0.00 |
| Other Non-Asphalt Surfaces | 0.00 | 391 | 0.0330 | 0.0040 | 0.00 |

## 5.12. Operational Water and Wastewater Consumption

### 5.12.2. Mitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|---|---|---|
| General Office Building | 4,250,822 | 328,336 |
| Parking Lot | 0.00 | 0.00 |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 |

## 5.13. Operational Waste Generation

### 5.13.2. Mitigated

| Land Use | Waste (ton/year) | Cogeneration (kWh/year) |
|---|---|---|
| General Office Building | 24.7 | 0.00 |

| | | |
|---|---|---|
| Parking Lot | 0.00 | 0.00 |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 |

## 5.14. Operational Refrigeration and Air Conditioning Equipment

### 5.14.2. Mitigated

| Land Use Type | Equipment Type | Refrigerant | GWP | Quantity (kg) | Operations Leak Rate | Service Leak Rate | Times Serviced |
|---|---|---|---|---|---|---|---|
| General Office Building | Household refrigerators and/or freezers | R-134a | 1,430 | 0.02 | 0.60 | 0.00 | 1.00 |
| General Office Building | Other commercial A/C and heat pumps | R-410A | 2,088 | < 0.005 | 4.00 | 4.00 | 18.0 |

## 5.15. Operational Off-Road Equipment

### 5.15.2. Mitigated

| Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|

## 5.17. User Defined

| Equipment Type | Fuel Type |
|---|---|
| — | — |

# 8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Land Use | Applicant provided information |
| Construction: Architectural Coatings | Applicant provided information |
| Construction: Construction Phases | Based on applicant info., see assumptions file |
| Construction: Off-Road Equipment | Provided by Applicant, see assumptions file |

| | |
|---|---|
| Construction: Trips and VMT | Added in water truck trips to vendor trips, added End dump truck trips to building demolition and asphalt demolition phases as provided by applicant, see assumptions file |
| Operations: Vehicle Data | Adjusted trip rate, see assumptions file |
| Operations: Fleet Mix | Adjusted fleet mix, see assumptions file |
| Operations: Architectural Coatings | Based on applicant info., see assumptions file |
| Operations: Water and Waste Water | Assume 100% aerobic treatment |

# Energy Calculations

## Operation-Related Vehicle Fuel/Energy Usage

**PROJECT LAND USE COMMUTE**

| Vehicle Type | Gas | | Diesel | | CNG | | Electricity | |
|---|---|---|---|---|---|---|---|---|
| | VMT | Gallons | VMT | Gallons | VMT | Gallons | VMT | kWh |
| All Vehicles | 295,632 | 10,849 | 2,956 | 222 | 2 | 0 | 16,695 | 6,150 |
| **Total** | **295,632** | **10,849** | **2,956** | **222** | **2** | **0** | **16,695** | **6,150** |

## Operation - Vehicle Fuel Usage

**Land Use**

| Vehicle type | Fleet percent | VMT |
|---|---|---|
| | General Office Building | General Office Building |
| LDA | 53.56% | 168,881 |
| LDT1 | 6.35% | 20,032 |
| LDT2 | 33.06% | 104,247 |
| MDV | 2.00% | 6,306 |
| LHD1 | 0.52% | 1,642 |
| LHD2 | 0.13% | 413 |
| MHD | 0.16% | 493 |
| HHD | 0.10% | 316 |
| OBUS | 0.00% | 0 |
| UBUS | 0.00% | 0 |
| MCY | 4.02% | 12,666 |
| SBUS | 0.02% | 48 |
| MH | 0.08% | 241 |
| | 100.00% | 315,285 |

**PROPOSED CONDITIONS**

| Vehicle type | Gas percent | Diesel percent | CNG percent | Electricity percent | |
|---|---|---|---|---|---|
| LDA | 90.71% | 0.24% | 0.00% | 9.04% | |
| LDT1 | 99.51% | 0.01% | 0.00% | 0.48% | |
| LDT2 | 98.44% | 0.40% | 0.00% | 1.16% | |
| MDV | 96.39% | 2.02% | 0.00% | 1.59% | |
| LHD1 | 50.98% | 48.37% | 0.00% | 0.65% | |
| LHD2 | 24.26% | 75.14% | 0.00% | 0.60% | |
| MHD | 8.76% | 90.25% | 0.00% | 0.99% | << Equal to T6 (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf) |
| HHD | 0.01% | 98.73% | 0.66% | 0.60% | << Equal to T7 (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf) |
| OBUS | 40.96% | 58.84% | 0.00% | 0.35% | << Motor coach, all other buses, and OBUS (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf) |
| UBUS | 20.50% | 44.45% | 34.99% | 0.05% | |
| MCY | 100.00% | 0.00% | 0.00% | 0.00% | |
| SBUS | 12.40% | 86.89% | 0.00% | 0.71% | |
| MH | 62.91% | 37.09% | 0.00% | 0.00% | |

**PROPOSED CONDITIONS**

| Vehicle type | Gasoline | | | Diesel | | | CNG | | | Electricity | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | VMT | mpg | Gallons | VMT | mpg | Gallons | VMT | mpg | Gallons | VMT | m/kWh | kWh |
| LDA | 153,193 | 29.88 | 5,126 | 413 | 42.87 | 10 | 0 | 0.00 | 0 | 15,275 | 2.70 | 5,655 |
| LDT1 | 19,935 | 25.22 | 790 | 2 | 23.72 | 0 | 0 | 0.00 | 0 | 96 | 2.79 | 34 |
| LDT2 | 102,622 | 24.61 | 4,169 | 421 | 32.84 | 13 | 0 | 0.00 | 0 | 1,204 | 2.91 | 413 |
| MDV | 6,078 | 19.83 | 306 | 128 | 24.60 | 5 | 0 | 0.00 | 0 | 100 | 2.80 | 36 |
| LHD1 | 837 | 9.75 | 86 | 794 | 15.90 | 50 | 0 | 0.00 | 0 | 11 | 1.54 | 7 |
| LHD2 | 100 | 8.79 | 11 | 310 | 13.09 | 24 | 0 | 0.00 | 0 | 2 | 1.56 | 2 |
| MHD | 43 | 4.82 | 9 | 445 | 8.54 | 52 | 0 | 0.00 | 0.00 | 5 | 0.00 | 0 |
| HHD | 0 | 3.64 | 0 | 311 | 5.81 | 54 | 2 | 4.82 | 0.44 | 2 | 0.54 | 4 |
| OBUS | 0 | 4.86 | 0 | 0 | 7.79 | 0 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0 |
| UBUS | 0 | 5.46 | 0 | 0 | 9.54 | 0 | 0 | 6.04 | 0.00 | 0 | 0.57 | 0 |
| MCY | 12,666 | 40.18 | 315 | 0 | 0.00 | 0 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0 |
| SBUS | 6 | 9.75 | 1 | 42 | 8.09 | 5 | 0 | 0.00 | 0.00 | 0 | 0.95 | 0 |
| MH | 151 | 4.41 | 34 | 89 | 9.39 | 10 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0 |
| | **295,632** | | **10,849** | **2,956** | | **222** | **2** | | **0** | **16,695** | | **6,150** |

## EMFAC Fuel Usage: Year 2025

| Vehicle type | GAS | | | DSL | | | NG | | | ELEC | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | VMT/day | Gallons/day | Miles/gallon | VMT/day | Gallons/day | Miles/gallon | VMT/day | Gallons/day | Miles/gallon | VMT/day | kWh/day | Miles/kWh |
| All other buses | 0 | 0 | 0.00 | 3,400 | 394 | 8.62 | 0 | 0 | 0.00 | 0 | 0 | 0.00 |
| LDA | 2,698,056 | 90,287 | 29.88 | 7,267 | 170 | 42.87 | 0 | 0 | 0.00 | 269,030 | 99,592 | 2.70 |
| LDT1 | 316,109 | 12,532 | 25.22 | 28 | 1 | 23.72 | 0 | 0 | 0.00 | 1,515 | 543 | 2.79 |
| LDT2 | 2,062,264 | 83,788 | 24.61 | 8,461 | 258 | 32.84 | 0 | 0 | 0.00 | 24,197 | 8,303 | 2.91 |
| LHD1 | 153,430 | 15,729 | 9.75 | 145,560 | 9,153 | 15.90 | 0 | 0 | 0.00 | 1,949 | 1,268 | 1.54 |
| LHD2 | 19,095 | 2,171 | 8.79 | 59,147 | 4,520 | 13.09 | 0 | 0 | 0.00 | 474 | 304 | 1.56 |
| MCY | 31,584 | 786 | 40.18 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 0 | 0 | 0.00 |
| MDV | 1,186,662 | 59,831 | 19.83 | 24,913 | 1,013 | 24.60 | 0 | 0 | 0.00 | 19,517 | 6,971 | 2.80 |
| MH | 6,667 | 1,510 | 4.41 | 3,930 | 419 | 9.39 | 0 | 0 | 0.00 | 0 | 0 | 0.00 |
| Motor coach | 0 | 0 | 0.00 | 1,265 | 228 | 5.55 | 0 | 0 | 0.00 | 0 | 0 | 0.00 |
| OBUS | 3,236 | 666 | 4.86 | 0 | 0 | 0.00 | 0 | 0 | 0.00 | 28 | 31 | 0.90 |
| PTO | 0 | 0 | 0.00 | 5,401 | 1,091 | 4.95 | 0 | 0 | 0.00 | 49 | 102 | 0.48 |
| SBUS | 739 | 76 | 9.75 | 5,177 | 640 | 8.09 | 0 | 0 | 0.00 | 42 | 45 | 0.95 |
| T6 | 10,297 | 2,138 | 4.82 | 106,074 | 12,414 | 8.54 | 0 | 0 | 0.00 | 1,163 | 1,270 | 0.92 |
| T7 | 19 | 5 | 3.64 | 191,758 | 32,987 | 5.81 | 1,291 | 268 | 4.82 | 1,164 | 2,148 | 0.54 |
| UBUS | 2,248 | 412 | 5.46 | 4,876 | 511 | 9.54 | 3,839 | 635 | 6.04 | 6 | 11 | 0.57 |
| **Total** | **6,490,408** | **269,933** | **24.04** | **567,258** | **63,797** | **8.89** | **5,130** | **903** | **5.68** | **319,134** | **120,588** | **2.65** |

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Placer(SV)
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

| Region | Calendar Year | Vehicle Category | Model Year | Speed | Fuel | Population | Total VMT | CVMT | EVMT | Trips | Fuel Consumption | Energy Consumption |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Placer (SV) | 2025 | All Other Buses | Aggregate | Aggregate | Diesel | 62.23569376 | 3399.886798 | 3399.886798 | 0 | 553.8976745 | 0.394207637 | 0 |
| Placer (SV) | 2025 | LDA | Aggregate | Aggregate | Gasoline | 72395.60033 | 2651241.838 | 2651241.838 | 0 | 336960.906 | 88.61447672 | 0 |
| Placer (SV) | 2025 | LDA | Aggregate | Aggregate | Diesel | 265.5470407 | 7267.393163 | 7267.393163 | 0 | 1116.580787 | 0.169541266 | 0 |
| Placer (SV) | 2025 | LDA | Aggregate | Aggregate | Electricity | 4604.958232 | 218158.8712 | 0 | 218158.8712 | 22878.33686 | 0 | 84227.32992 |
| Placer (SV) | 2025 | LDA | Aggregate | Aggregate | Plug-in Hybrid | 2232.385462 | 97685.26901 | 46814.63768 | 50870.63133 | 9230.913886 | 1.672622136 | 15364.44685 |
| Placer (SV) | 2025 | LDT1 | Aggregate | Aggregate | Gasoline | 9188.122697 | 315727.7117 | 315727.7117 | 0 | 40619.7685 | 12.51889102 | 0 |
| Placer (SV) | 2025 | LDT1 | Aggregate | Aggregate | Diesel | 4.216368104 | 27.72923028 | 27.72923028 | 0 | 11.55953436 | 0.001169047 | 0 |
| Placer (SV) | 2025 | LDT1 | Aggregate | Aggregate | Electricity | 23.08458126 | 1019.742115 | 0 | 1019.742115 | 111.6813212 | 0 | 393.7046202 |
| Placer (SV) | 2025 | LDT1 | Aggregate | Aggregate | Plug-in Hybrid | 15.36102602 | 876.6091945 | 381.1709448 | 495.4382497 | 63.5178426 | 0.013582807 | 149.6371178 |
| Placer (SV) | 2025 | LDT2 | Aggregate | Aggregate | Gasoline | 49476.74912 | 2051810.539 | 2051810.539 | 0 | 231710.5555 | 83.41386742 | 0 |
| Placer (SV) | 2025 | LDT2 | Aggregate | Aggregate | Diesel | 201.4639364 | 8460.561026 | 8460.561026 | 0 | 950.7171404 | 0.257602396 | 0 |
| Placer (SV) | 2025 | LDT2 | Aggregate | Aggregate | Electricity | 336.1664609 | 11839.49994 | 0 | 11839.49994 | 1710.207038 | 0 | 4571.024144 |
| Placer (SV) | 2025 | LDT2 | Aggregate | Aggregate | Plug-in Hybrid | 425.6061621 | 22810.44274 | 10453.1479 | 12357.29484 | 1759.88148 | 0.373740736 | 3732.271349 |
| Placer (SV) | 2025 | LHD1 | Aggregate | Aggregate | Gasoline | 4144.096025 | 153430.4836 | 153430.4836 | 0 | 61740.85607 | 15.72932771 | 0 |
| Placer (SV) | 2025 | LHD1 | Aggregate | Aggregate | Diesel | 4236.37273 | 145560.3585 | 145560.3585 | 0 | 53288.23958 | 9.152762693 | 0 |
| Placer (SV) | 2025 | LHD1 | Aggregate | Aggregate | Electricity | 28.4554566 | 1948.667583 | 0 | 1948.667583 | 398.0243503 | 0 | 1268.401952 |
| Placer (SV) | 2025 | LHD2 | Aggregate | Aggregate | Gasoline | 517.7283603 | 19095.14936 | 19095.14936 | 0 | 7713.381154 | 2.171445157 | 0 |
| Placer (SV) | 2025 | LHD2 | Aggregate | Aggregate | Diesel | 1616.631243 | 59146.73204 | 59146.73204 | 0 | 20335.18732 | 4.519765429 | 0 |
| Placer (SV) | 2025 | LHD2 | Aggregate | Aggregate | Electricity | 7.287769143 | 474.3662067 | 0 | 474.3662067 | 96.64232797 | 0 | 303.7708082 |
| Placer (SV) | 2025 | MCY | Aggregate | Aggregate | Gasoline | 5862.778373 | 31584.12551 | 31584.12551 | 0 | 11725.55675 | 0.785992283 | 0 |
| Placer (SV) | 2025 | MDV | Aggregate | Aggregate | Gasoline | 33492.75657 | 1180701.875 | 1180701.875 | 0 | 154229.898 | 59.6143092 | 0 |
| Placer (SV) | 2025 | MDV | Aggregate | Aggregate | Diesel | 699.3201906 | 24913.13686 | 24913.13686 | 0 | 3254.198607 | 1.012675877 | 0 |
| Placer (SV) | 2025 | MDV | Aggregate | Aggregate | Electricity | 364.2800818 | 12804.62121 | 0 | 12804.62121 | 1851.995325 | 0 | 4943.640609 |
| Placer (SV) | 2025 | MDV | Aggregate | Aggregate | Plug-in Hybrid | 282.5201061 | 12672.25164 | 5959.956388 | 6712.295255 | 1168.220639 | 0.21695927 | 2027.313225 |
| Placer (SV) | 2025 | MH | Aggregate | Aggregate | Gasoline | 767.4275912 | 6667.028017 | 6667.028017 | 0 | 76.77345622 | 1.510364489 | 0 |
| Placer (SV) | 2025 | MH | Aggregate | Aggregate | Diesel | 441.6199617 | 3929.946962 | 3929.946962 | 0 | 44.16199617 | 0.418642587 | 0 |
| Placer (SV) | 2025 | Motor Coach | Aggregate | Aggregate | Diesel | 9.463926165 | 1265.318383 | 1265.318383 | 0 | 217.4810233 | 0.227909462 | 0 |
| Placer (SV) | 2025 | OBUS | Aggregate | Aggregate | Gasoline | 78.56749235 | 3236.127187 | 3236.127187 | 0 | 1571.978387 | 0.665969687 | 0 |
| Placer (SV) | 2025 | OBUS | Aggregate | Aggregate | Electricity | 0.385872334 | 27.68510774 | 0 | 27.68510774 | 7.720533649 | 0 | 30.71065227 |
| Placer (SV) | 2025 | PTO | Aggregate | Aggregate | Diesel | 0 | 5401.279428 | 5401.279428 | 0 | 0 | 1.09051434 | 0 |
| Placer (SV) | 2025 | PTO | Aggregate | Aggregate | Electricity | 0 | 49.32709027 | 0 | 49.32709027 | 0 | 0 | 102.1819933 |
| Placer (SV) | 2025 | SBUS | Aggregate | Aggregate | Gasoline | 17.29207167 | 738.9693665 | 738.9693665 | 0 | 69.16828668 | 0.075829606 | 0 |
| Placer (SV) | 2025 | SBUS | Aggregate | Aggregate | Diesel | 235.7872258 | 5177.211933 | 5177.211933 | 0 | 3414.19903 | 0.640336305 | 0 |
| Placer (SV) | 2025 | SBUS | Aggregate | Aggregate | Electricity | 1.488400542 | 42.43925583 | 0 | 42.43925583 | 19.58160988 | 0 | 44.7078713 |
| Placer (SV) | 2025 | T6 CAIRP Class 4 | Aggregate | Aggregate | Diesel | 1.961878936 | 133.1193472 | 133.1193472 | 0 | 45.08397794 | 0.014774903 | 0 |
| Placer (SV) | 2025 | T6 CAIRP Class 4 | Aggregate | Aggregate | Electricity | 0.025359055 | 2.110317028 | 0 | 2.110317028 | 0.582751095 | 0 | 2.292402618 |
| Placer (SV) | 2025 | T6 CAIRP Class 5 | Aggregate | Aggregate | Diesel | 2.595371393 | 182.9256333 | 182.9256333 | 0 | 59.64163462 | 0.020316427 | 0 |
| Placer (SV) | 2025 | T6 CAIRP Class 5 | Aggregate | Aggregate | Electricity | 0.029364792 | 2.585148331 | 0 | 2.585148331 | 0.674802915 | 0 | 2.808204038 |
| Placer (SV) | 2025 | T6 CAIRP Class 6 | Aggregate | Aggregate | Diesel | 8.812778892 | 474.7136213 | 474.7136213 | 0 | 202.5176589 | 0.051907839 | 0 |
| Placer (SV) | 2025 | T6 CAIRP Class 6 | Aggregate | Aggregate | Electricity | 0.16504773 | 10.03135841 | 0 | 10.03135841 | 3.792796835 | 0 | 10.89689936 |
| Placer (SV) | 2025 | T6 CAIRP Class 7 | Aggregate | Aggregate | Diesel | 14.54610663 | 3010.112813 | 3010.112813 | 0 | 334.2695303 | 0.305928487 | 0 |
| Placer (SV) | 2025 | T6 CAIRP Class 7 | Aggregate | Aggregate | Electricity | 0.14039714 | 30.45271488 | 0 | 30.45271488 | 3.226326268 | 0 | 33.08028243 |
| Placer (SV) | 2025 | T6 Instate Delivery Class 4 | Aggregate | Aggregate | Diesel | 139.8447434 | 4773.431705 | 4773.431705 | 0 | 1995.584489 | 0.575116158 | 0 |
| Placer (SV) | 2025 | T6 Instate Delivery Class 4 | Aggregate | Aggregate | Electricity | 1.307853937 | 52.38157477 | 0 | 52.38157477 | 18.66307568 | 0 | 55.95814045 |
| Placer (SV) | 2025 | T6 Instate Delivery Class 5 | Aggregate | Aggregate | Diesel | 31.73402049 | 1089.178423 | 1089.178423 | 0 | 452.8444724 | 0.130777925 | 0 |
| Placer (SV) | 2025 | T6 Instate Delivery Class 5 | Aggregate | Aggregate | Electricity | 0.267669451 | 10.73534544 | 0 | 10.73534544 | 3.819643072 | 0 | 11.46834493 |
| Placer (SV) | 2025 | T6 Instate Delivery Class 6 | Aggregate | Aggregate | Diesel | 176.325985 | 6020.757084 | 6020.757084 | 0 | 2516.171805 | 0.724004926 | 0 |
| Placer (SV) | 2025 | T6 Instate Delivery Class 6 | Aggregate | Aggregate | Electricity | 1.526509198 | 60.03742804 | 0 | 60.03742804 | 21.78328625 | 0 | 64.13672833 |
| Placer (SV) | 2025 | T6 Instate Delivery Class 7 | Aggregate | Aggregate | Diesel | 30.56752052 | 1609.806487 | 1609.806487 | 0 | 436.1985178 | 0.188854935 | 0 |
| Placer (SV) | 2025 | T6 Instate Delivery Class 7 | Aggregate | Aggregate | Electricity | 0.140203292 | 5.793928841 | 0 | 5.793928841 | 2.000700983 | 0 | 6.189532966 |
| Placer (SV) | 2025 | T6 Instate Other Class 4 | Aggregate | Aggregate | Diesel | 369.1100309 | 15658.1324 | 15658.1324 | 0 | 4266.911957 | 1.819219692 | 0 |
| Placer (SV) | 2025 | T6 Instate Other Class 4 | Aggregate | Aggregate | Electricity | 3.16753848 | 145.204484 | 0 | 145.204484 | 36.61674482 | 0 | 153.9285272 |
| Placer (SV) | 2025 | T6 Instate Other Class 5 | Aggregate | Aggregate | Diesel | 706.6239493 | 30917.6246 | 30917.6246 | 0 | 8168.572854 | 3.595940838 | 0 |
| Placer (SV) | 2025 | T6 Instate Other Class 5 | Aggregate | Aggregate | Electricity | 6.066056056 | 284.7197752 | 0 | 284.7197752 | 70.123608 | 0 | 301.8260487 |
| Placer (SV) | 2025 | T6 Instate Other Class 6 | Aggregate | Aggregate | Diesel | 375.0201121 | 16184.68186 | 16184.68186 | 0 | 4335.232496 | 1.891511352 | 0 |
| Placer (SV) | 2025 | T6 Instate Other Class 6 | Aggregate | Aggregate | Electricity | 3.14948115 | 145.4197987 | 0 | 145.4197987 | 36.40800209 | 0 | 154.1567782 |
| Placer (SV) | 2025 | T6 Instate Other Class 7 | Aggregate | Aggregate | Diesel | 204.7002577 | 9251.674177 | 9251.674177 | 0 | 2366.334979 | 1.055359222 | 0 |
| Placer (SV) | 2025 | T6 Instate Other Class 7 | Aggregate | Aggregate | Electricity | 1.375984981 | 93.19130433 | 0 | 93.19130433 | 15.90638638 | 0 | 98.79033916 |
| Placer (SV) | 2025 | T6 Instate Tractor Class 6 | Aggregate | Aggregate | Diesel | 7.858470283 | 426.8975237 | 426.8975237 | 0 | 90.84391648 | 0.050011772 | 0 |
| Placer (SV) | 2025 | T6 Instate Tractor Class 6 | Aggregate | Aggregate | Electricity | 0.099779679 | 6.716996699 | 0 | 6.716996699 | 1.153453085 | 0 | 7.120561159 |
| Placer (SV) | 2025 | T6 Instate Tractor Class 7 | Aggregate | Aggregate | Diesel | 26.07914468 | 1522.682196 | 1522.682196 | 0 | 301.4749125 | 0.169471806 | 0 |
| Placer (SV) | 2025 | T6 Instate Tractor Class 7 | Aggregate | Aggregate | Electricity | 0.032312152 | 2.178876425 | 0 | 2.178876425 | 0.373528481 | 0 | 2.309785689 |
| Placer (SV) | 2025 | T6 OOS Class 4 | Aggregate | Aggregate | Diesel | 1.028011874 | 69.2561103 | 69.2561103 | 0 | 23.62371287 | 0.007593592 | 0 |
| Placer (SV) | 2025 | T6 OOS Class 5 | Aggregate | Aggregate | Diesel | 1.353167634 | 95.00692945 | 95.00692945 | 0 | 31.09579223 | 0.010437903 | 0 |
| Placer (SV) | 2025 | T6 OOS Class 6 | Aggregate | Aggregate | Diesel | 4.629633167 | 248.2558248 | 248.2558248 | 0 | 106.3889702 | 0.026717738 | 0 |
| Placer (SV) | 2025 | T6 OOS Class 7 | Aggregate | Aggregate | Diesel | 7.004524314 | 1805.12855 | 1805.12855 | 0 | 160.9639687 | 0.181870449 | 0 |
| Placer (SV) | 2025 | T6 Public Class 4 | Aggregate | Aggregate | Diesel | 35.69476086 | 1283.920507 | 1283.920507 | 0 | 183.1141232 | 0.166047961 | 0 |
| Placer (SV) | 2025 | T6 Public Class 4 | Aggregate | Aggregate | Electricity | 0.327856869 | 14.20912679 | 0 | 14.20912679 | 1.681905739 | 0 | 16.77956575 |
| Placer (SV) | 2025 | T6 Public Class 5 | Aggregate | Aggregate | Diesel | 89.01941792 | 3278.383554 | 3278.383554 | 0 | 456.6696139 | 0.419716997 | 0 |
| Placer (SV) | 2025 | T6 Public Class 5 | Aggregate | Aggregate | Electricity | 0.814881324 | 35.21136041 | 0 | 35.21136041 | 4.180341193 | 0 | 41.58111512 |
| Placer (SV) | 2025 | T6 Public Class 6 | Aggregate | Aggregate | Diesel | 25.19645703 | 885.3112307 | 885.3112307 | 0 | 129.2578246 | 0.115282781 | 0 |
| Placer (SV) | 2025 | T6 Public Class 6 | Aggregate | Aggregate | Electricity | 0.277900618 | 11.68816821 | 0 | 11.68816821 | 1.42563017 | 0 | 13.80256435 |
| Placer (SV) | 2025 | T6 Public Class 7 | Aggregate | Aggregate | Diesel | 142.3302186 | 6555.700571 | 6555.700571 | 0 | 730.1540215 | 0.826259573 | 0 |
| Placer (SV) | 2025 | T6 Public Class 7 | Aggregate | Aggregate | Electricity | 1.45444941 | 95.35281642 | 0 | 95.35281642 | 7.461325474 | 0 | 112.602194 |
| Placer (SV) | 2025 | T6 Utility Class 5 | Aggregate | Aggregate | Diesel | 10.1475181 | 411.6917036 | 411.6917036 | 0 | 129.8882317 | 0.046238527 | 0 |
| Placer (SV) | 2025 | T6 Utility Class 5 | Aggregate | Aggregate | Electricity | 0.182827612 | 7.945074907 | 0 | 7.945074907 | 2.340193435 | 0 | 8.898987517 |
| Placer (SV) | 2025 | T6 Utility Class 6 | Aggregate | Aggregate | Diesel | 1.925350435 | 77.79176395 | 77.79176395 | 0 | 24.64448557 | 0.008711424 | 0 |
| Placer (SV) | 2025 | T6 Utility Class 6 | Aggregate | Aggregate | Electricity | 0.034771723 | 1.511092608 | 0 | 1.511092608 | 0.445078055 | 0 | 1.692519506 |
| Placer (SV) | 2025 | T6 Utility Class 7 | Aggregate | Aggregate | Diesel | 2.170199166 | 107.915515 | 107.915515 | 0 | 27.77854933 | 0.011996828 | 0 |
| Placer (SV) | 2025 | T6 Utility Class 7 | Aggregate | Aggregate | Electricity | 0.039206257 | 2.421101071 | 0 | 2.421101071 | 0.501840094 | 0 | 2.711786668 |
| Placer (SV) | 2025 | T6TS | Aggregate | Aggregate | Gasoline | 224.9616338 | 10297.24983 | 10297.24983 | 0 | 4501.03237 | 2.137843028 | 0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Placer (SV) | 2025 | T6TS | Aggregate | Aggregate | Electricity | 1.997237121 | 143.4133992 | 0 | 143.4133992 | 39.96072031 | 0 | 167.424662 |
| Placer (SV) | 2025 | T7 CAIRP Class 8 | Aggregate | Aggregate | Diesel | 224.1076139 | 46413.37017 | 46413.37017 | 0 | 5149.992967 | 7.462587486 | 0 |
| Placer (SV) | 2025 | T7 CAIRP Class 8 | Aggregate | Aggregate | Electricity | 2.839703643 | 568.5587741 | 0 | 568.5587741 | 65.25638971 | 0 | 1038.146291 |
| Placer (SV) | 2025 | T7 NNOOS Class 8 | Aggregate | Aggregate | Diesel | 202.5093549 | 55799.40931 | 55799.40931 | 0 | 4653.664974 | 8.719276725 | 0 |
| Placer (SV) | 2025 | T7 NOOS Class 8 | Aggregate | Aggregate | Diesel | 85.86155673 | 20289.07692 | 20289.07692 | 0 | 1973.098574 | 3.246507044 | 0 |
| Placer (SV) | 2025 | T7 Other Port Class 8 | Aggregate | Aggregate | Diesel | 2.736428961 | 508.0566897 | 508.0566897 | 0 | 44.7679778 | 0.08496034 | 0 |
| Placer (SV) | 2025 | T7 Other Port Class 8 | Aggregate | Aggregate | Electricity | 0.011218038 | 2.671054311 | 0 | 2.671054311 | 0.183527109 | 0 | 4.861231334 |
| Placer (SV) | 2025 | T7 POAK Class 8 | Aggregate | Aggregate | Diesel | 9.06312588 | 902.1323641 | 902.1323641 | 0 | 148.2727394 | 0.153912958 | 0 |
| Placer (SV) | 2025 | T7 POAK Class 8 | Aggregate | Aggregate | Electricity | 0.048022115 | 4.17042919 | 0 | 4.17042919 | 0.785641793 | 0 | 7.590044491 |
| Placer (SV) | 2025 | T7 Public Class 8 | Aggregate | Aggregate | Diesel | 288.0255741 | 12564.80071 | 12564.80071 | 0 | 1477.571195 | 2.372458432 | 0 |
| Placer (SV) | 2025 | T7 Public Class 8 | Aggregate | Aggregate | Electricity | 2.396065114 | 154.3120504 | 0 | 154.3120504 | 12.29181404 | 0 | 302.8501392 |
| Placer (SV) | 2025 | T7 Public Class 8 | Aggregate | Aggregate | Natural Gas | 1.632078411 | 86.00581547 | 86.00581547 | 0 | 8.372562251 | 0.018342589 | 0 |
| Placer (SV) | 2025 | T7 Single Concrete/Transit Mix Cla | Aggregate | Aggregate | Diesel | 20.24476874 | 1435.582216 | 1435.582216 | 0 | 190.7057216 | 0.251723118 | 0 |
| Placer (SV) | 2025 | T7 Single Concrete/Transit Mix Cla | Aggregate | Aggregate | Electricity | 0.269950977 | 19.68082833 | 0 | 19.68082833 | 2.542938202 | 0 | 35.88118431 |
| Placer (SV) | 2025 | T7 Single Concrete/Transit Mix Cla | Aggregate | Aggregate | Natural Gas | 0.053137335 | 3.81556499 | 3.81556499 | 0 | 0.500553692 | 0.00062247 | 0 |
| Placer (SV) | 2025 | T7 Single Dump Class 8 | Aggregate | Aggregate | Diesel | 170.3296029 | 10086.57307 | 10086.57307 | 0 | 1604.50486 | 1.753539364 | 0 |
| Placer (SV) | 2025 | T7 Single Dump Class 8 | Aggregate | Aggregate | Electricity | 0.808634788 | 60.39680708 | 0 | 60.39680708 | 7.617339703 | 0 | 110.1126909 |
| Placer (SV) | 2025 | T7 Single Dump Class 8 | Aggregate | Aggregate | Natural Gas | 1.271048268 | 67.54375686 | 67.54375686 | 0 | 11.97327468 | 0.013331429 | 0 |
| Placer (SV) | 2025 | T7 Single Other Class 8 | Aggregate | Aggregate | Diesel | 272.4335743 | 15413.31834 | 15413.31834 | 0 | 2566.32427 | 2.607235151 | 0 |
| Placer (SV) | 2025 | T7 Single Other Class 8 | Aggregate | Aggregate | Electricity | 2.300942807 | 168.3434509 | 0 | 168.3434509 | 21.67488124 | 0 | 306.9160651 |
| Placer (SV) | 2025 | T7 Single Other Class 8 | Aggregate | Aggregate | Natural Gas | 3.433490504 | 195.0898799 | 195.0898799 | 0 | 32.34348055 | 0.035568143 | 0 |
| Placer (SV) | 2025 | T7 SWCV Class 8 | Aggregate | Aggregate | Diesel | 127.5177882 | 8265.114207 | 8265.114207 | 0 | 586.5818259 | 3.072019397 | 0 |
| Placer (SV) | 2025 | T7 SWCV Class 8 | Aggregate | Aggregate | Electricity | 0.99748274 | 64.15328799 | 0 | 64.15328799 | 4.588420605 | 0 | 119.3604452 |
| Placer (SV) | 2025 | T7 SWCV Class 8 | Aggregate | Aggregate | Natural Gas | 13.3732629 | 866.838775 | 866.838775 | 0 | 61.51700932 | 0.186224818 | 0 |
| Placer (SV) | 2025 | T7 Tractor Class 8 | Aggregate | Aggregate | Diesel | 259.7479731 | 19752.38263 | 19752.38263 | 0 | 3774.13805 | 3.206386031 | 0 |
| Placer (SV) | 2025 | T7 Tractor Class 8 | Aggregate | Aggregate | Electricity | 1.430817276 | 118.4178157 | 0 | 118.4178157 | 20.78977502 | 0 | 215.6044775 |
| Placer (SV) | 2025 | T7 Tractor Class 8 | Aggregate | Aggregate | Natural Gas | 1.025665842 | 71.99938021 | 71.99938021 | 0 | 14.90292468 | 0.014077263 | 0 |
| Placer (SV) | 2025 | T7 Utility Class 8 | Aggregate | Aggregate | Diesel | 7.34028468 | 328.3453088 | 328.3453088 | 0 | 93.95564391 | 0.056146999 | 0 |
| Placer (SV) | 2025 | T7 Utility Class 8 | Aggregate | Aggregate | Electricity | 0.046888928 | 3.005081254 | 0 | 3.005081254 | 0.600178273 | 0 | 5.657961826 |
| Placer (SV) | 2025 | T7IS | Aggregate | Aggregate | Gasoline | 0.652910065 | 19.36954684 | 19.36954684 | 0 | 13.06342459 | 0.005315075 | 0 |
| Placer (SV) | 2025 | T7IS | Aggregate | Aggregate | Electricity | 0.001793024 | 0.411448319 | 0 | 0.411448319 | 0.03587482 | 0 | 0.826782655 |
| Placer (SV) | 2025 | UBUS | Aggregate | Aggregate | Gasoline | 32.66017063 | 2248.296554 | 2248.296554 | 0 | 130.6406825 | 0.411971718 | 0 |
| Placer (SV) | 2025 | UBUS | Aggregate | Aggregate | Diesel | 43.7133815 | 4876.341307 | 4876.341307 | 0 | 174.853526 | 0.510938462 | 0 |
| Placer (SV) | 2025 | UBUS | Aggregate | Aggregate | Electricity | 0.062670271 | 6.027186453 | 0 | 6.027186453 | 0.250681085 | 0 | 10.50685734 |
| Placer (SV) | 2025 | UBUS | Aggregate | Aggregate | Natural Gas | 25.59217995 | 3838.50645 | 3838.50645 | 0 | 102.3687198 | 0.635079033 | 0 |

# Appendix B Fundamentals of Noise

# Appendices

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# 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).

- **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.

# LOCAL REGULATIONS AND STANDARDS

# IX. NOISE



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# NOISE

## PURPOSE

The Noise Element outlines policies to achieve the City's goals of protecting Roseville residents from excessive noise. This Element establishes acceptable noise levels for land uses affected by fixed and transportation noise sources. The City's intent is to provide a reasonable community noise environment, in balance with other social, economic, and environmental goals.

# SETTING

Noise sources in Roseville can be characterized as "transportation-related" and "fixed." Transportation-related noise sources consist of roadway traffic noise, primarily from high-volume roadways, railroad noise, and aircraft overflight. Fixed noise refers to sources which originate from a specific, stationary location and include, but are not limited to, industrial facility noise; operations associated with commercial land uses; race track operations; and special events, such as softball and soccer games.

Noise levels in Roseville from transportation and fixed sources were documented through a community noise survey. The survey included a focus on areas where noise-sensitive land uses, which include residential areas, parks, and schools, that may be affected by community nose.[1]

Noise measurement sites were selected to be representative of typical conditions. The community noise survey was conducted at 19 locations, including nine long-term (24-hour) and 10 short-term (10 to 20 minutes) measurements. The community noise survey results indicate that typical noise levels in noise-sensitive areas range from 48 dB to 68 dB $L_{dn}$. Traffic on local roadways, SR 65 and I-80, railroad operations, distant commercial and industrial activities, and neighborhood activities are the controlling factors for background noise levels in most of the City.[2]

## Roadway Noise

The City created estimates of transportation noise affecting the Planning Area to support the General Plan, based on noise measurements and industry standard analysis methods.[3] Existing road noise contours are generally reflected on Figure IX-1 and future road noise contours on Figure IX-2.[4] The City's noise estimates include areas affected by transportation noise from Interstate 80, Highway 65, future Placer Parkway, and the City's arterials.

## Railroad Noise

Railroad activity in the City of Roseville includes freight and Amtrak operations on the Union Pacific Railroad Company (UPRR) tracks and activity within the UPRR J.R. Davis maintenance yard. The J.R. Davis yard is the largest rail facility on the west coast. Noise contours associated with railroad operations were developed using noise level measurements and accepted modeling techniques.

Noise levels associated with the maintenance yard include master and group retarder "squeal," recurring impulsive noises, and railroad line operations. The "squeal" occurs primarily at the south end of the yard and is a result of cars passing through retarders on their path to the classification yard after being pushed over the hump. The recurring impulsive noise generally occurs at the north end of the yard and is a result of freight train cars hitting together. Noise levels associated with railroad line operations are a result of warning horns, at-grade crossing bells, locomotive engine, and rail car noise.

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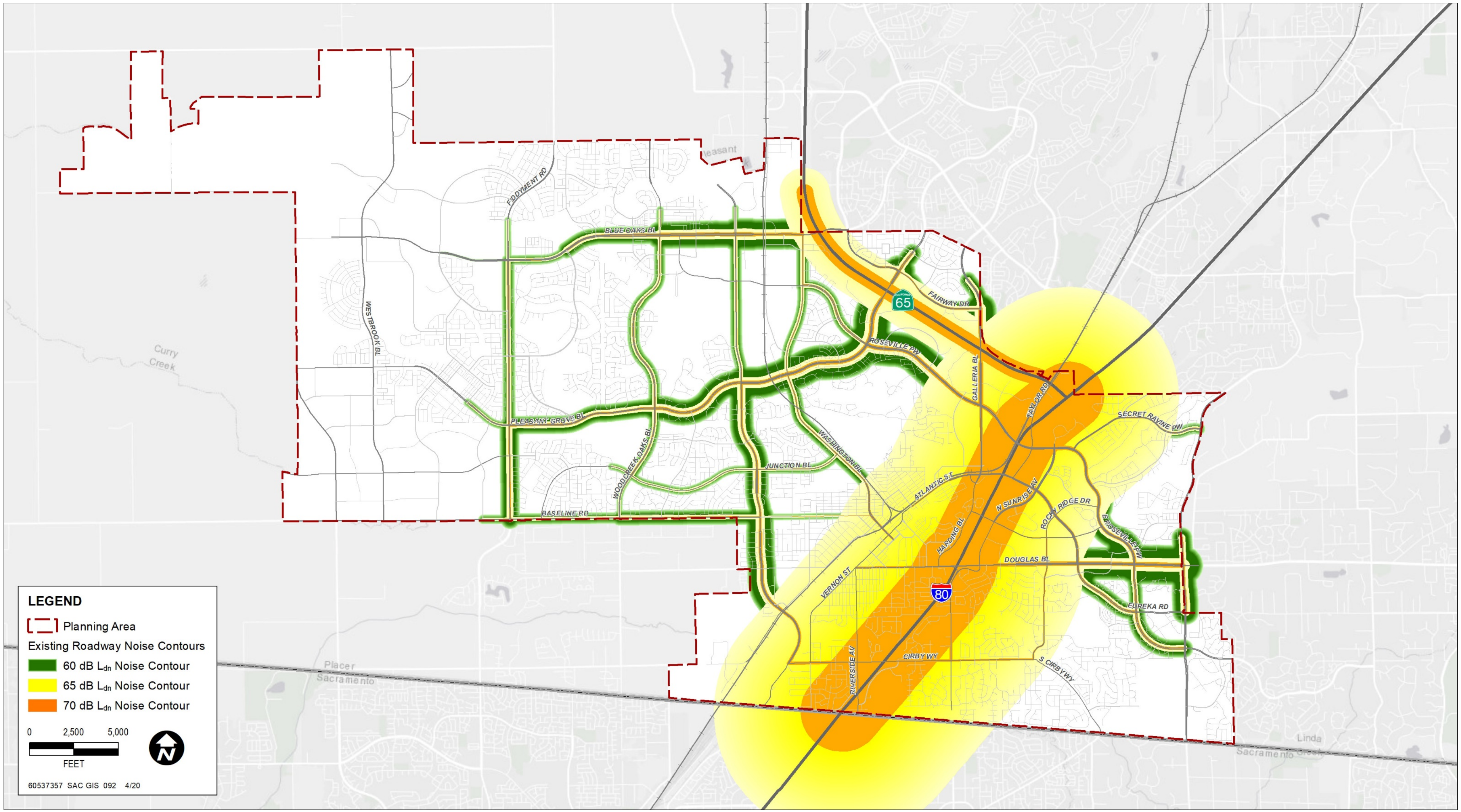
1 The main noise sources in the Planning Area are the major highways and high-volume roadways and the Union Pacific Railroad operations. Noise modeling techniques and noise measurements were used to develop generalized day-night average sound level (Ldn) noise contours for these major sources, as well as other secondary fixed noise sources in the Planning Area. The Ldn contours reflect the average equivalent sound level during a 24-hour day, with additional weight (10 dB) added to sound levels during the night (10:00 p.m. to 7:00 a.m.), when noise is most disruptive.

2 Please see the General Plan Environmental Impact Report for more detail.

3 The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to develop Ldn contours for all highways and major roadways in the City of Roseville General Plan Area. The FHWA Model is the analytical method presently favored for traffic noise prediction by most state and local agencies, including Caltrans.

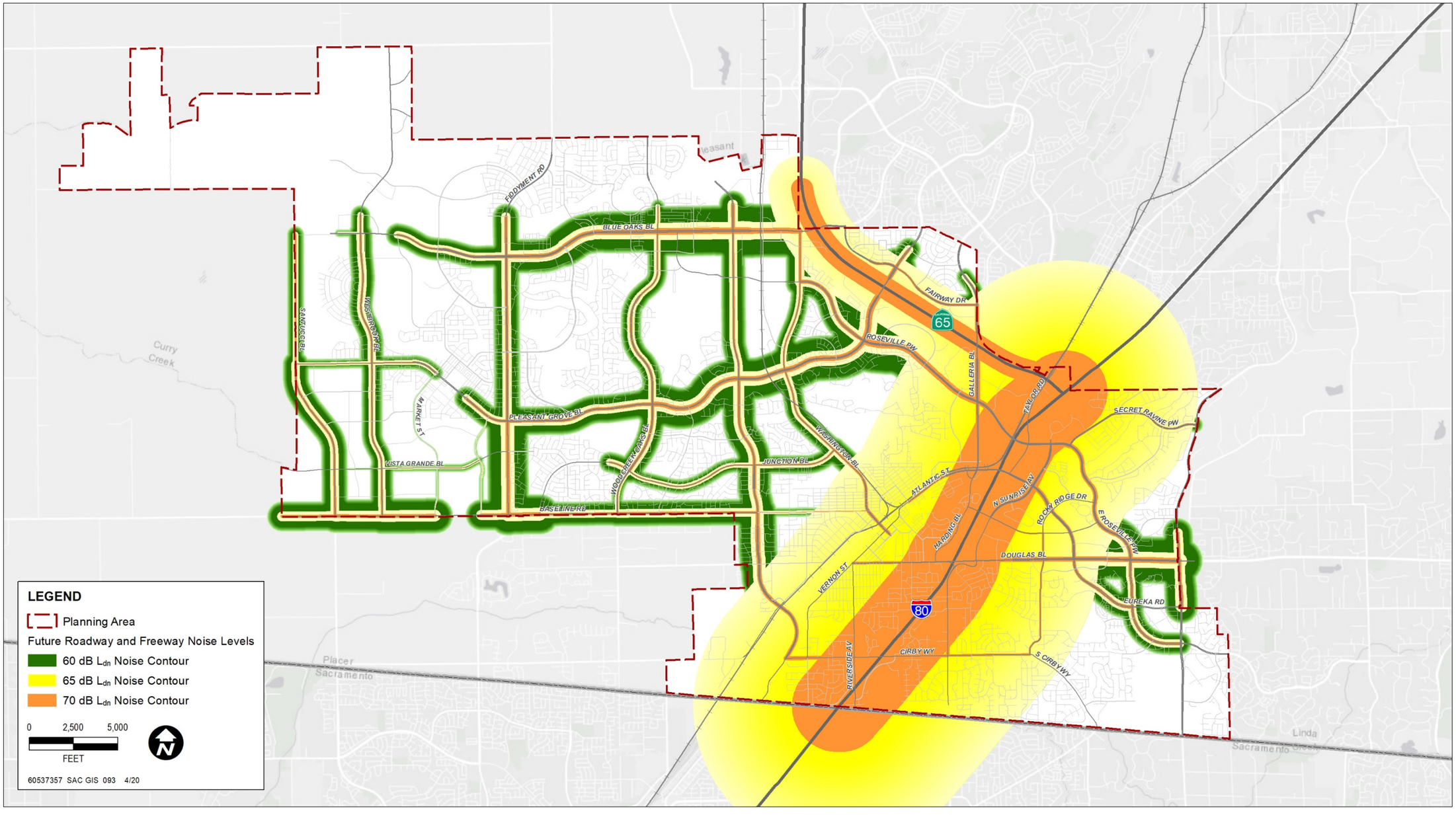
4 The traffic noise model was updated by JC Brennan, Noise Consultant, in 2015 as part of the Amoruso Ranch Specific Plan.

Figure IX-1 | Existing Roadway Noise Contours



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**Figure IX-2 | Future Roadway Noise Contours**



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Noise contours for the railroad activities are generally reflected on Figure IX-3. According to UPRR, railroad operations within Roseville are not anticipated to change substantially in the future. Therefore, significant modifications to the reflected noise contours are not anticipated.

## Overflight Noise

Aviation noise is addressed through a combination of short-term and continuous site noise measurements of aircraft operations and review of adopted airport land use compatibility policies and noise contours. Several airports operate regionally that may affect the City of Roseville. These include McClellan Airfield, Sacramento International Airport and the Lincoln Airport. Occasional overflights from all three airports can be expected. According to Sacramento County Airport staff, the area in the vicinity of McClellan Airfield is subject to frequent large aircraft (over 75,000 pounds) operating under 3,000 feet above ground level. Based on current and historical experience, single event noise occurrences can cause annoyance to residential or other sensitive uses. However, no noise standards are exceeded by the aircraft overflight.

## Fixed Noise Sources

Industrial processes are often recognized as a primary fixed noise source. Significant noise generation can occur even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by federal and state employee health and safety regulations (federal Occupational Safety and Health Administration [OSHA] and California Occupational Safety and Health Administration [Cal-OSHA]). Exterior noise levels may, however, exceed locally-acceptable standards.

Commercial, recreational, and public service facility activities can also produce noise that affects adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components that may be annoying to individuals who live in the vicinity. In addition, noise generation from fixed noise sources may vary based on climatic conditions, time of day, and existing ambient noise levels.

Numerous fixed noise sources are dispersed throughout the City. General noise contours for the primary identified existing fixed noise source locations in Roseville are reflected on Figure IX-4.

As development increases within the City of Roseville and adjacent communities, additional noise sources are expected to follow and overall noise levels are expected to increase.

To protect residents from excessive noise exposure, noise level standards for transportation-related noise sources are identified in this element. For most noise-sensitive land uses, a 60 dB $L_{dn}$ exterior noise level standard is established. In the case of residential uses, the intent of this standard is to provide an acceptable noise environment for outdoor activities. Interior noise level standards for most noise-sensitive land uses are established at 45 dB $L_{dn}$. In the case of residential uses, the intent of this standard is to provide a suitable environment for indoor communication and sleep. Table IX-1 cites the noise level criteria for transportation-related noise sources.

Hourly average noise level ($L_{eq}$) and maximum noise level standards have also been established for new noise-sensitive projects affected by fixed (non-transportation) noise sources. The standards include a penalty for simple tone noises, noise consisting primarily of speech or music, or for recurring impulsive noises.

Based upon the comprehensive noise survey completed within the City, traffic noise along highways and major arterials and railroad noise from UPRR activities are, and will continue to be, the primary sources of noise in the community. The City will closely review land use and development proposals that are in close proximity to major roadways and railroad facilities for potential impacts associated with noise.

Recognizing that in increasingly urban areas it is difficult to maintain rural/suburban noise standards, and in order to facilitate the City's goals to encourage reinvestment and economic development in the Riverside and Downtown Specific Plan areas, the City may elect to allow new noise-sensitive land uses on a case by case basis in a mixed-use environment or in proximity to transportation sources. Noise levels would require mitigation to the extent feasible using building orientation, construction and design features; however ultimately, noise levels may exceed the noise standards identified in Table IX-1.

Fixed/industrial noise sources will also contribute to the City's noise environment. Future development of industrial and other significant fixed noise sources in close proximity to noise-sensitive uses, or encroachment of noise-sensitive uses upon existing or planned future fixed noise sources, could cause noise conflicts. Future land use decisions will evaluate the potential for noise impacts when noise-sensitive uses and fixed noise sources, such as industrial uses, are located within close proximity. In addition to residential areas, other noise-sensitive receptors include schools, religious institutions, hospitals and convalescent hospitals.

### Vibration

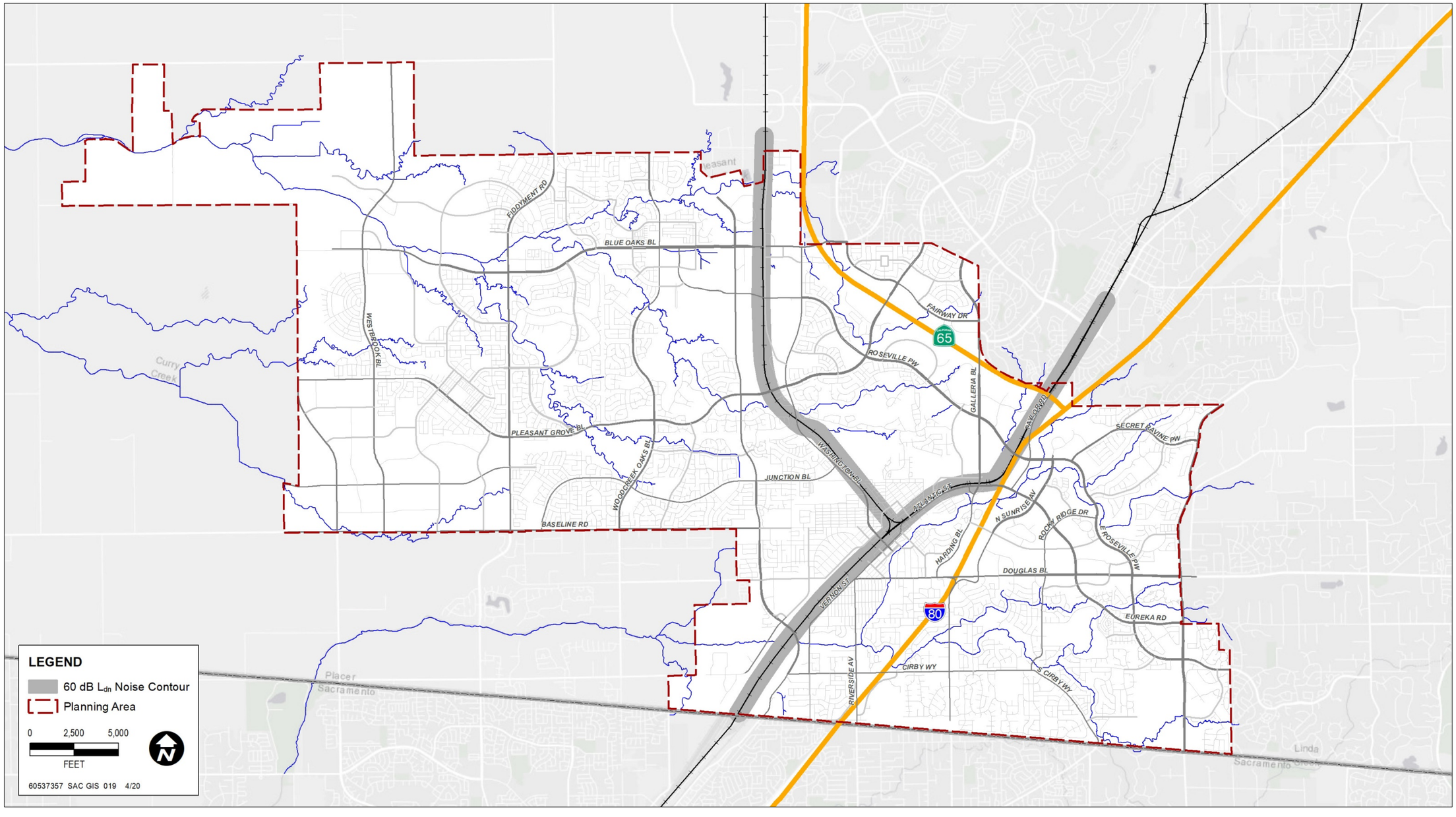
Vibration is the periodic motion of a medium (solid object, liquid, or gas) back and forth at a particular speed. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. Sources of groundborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or intermittent, such as a heavy truck driving by.

Vibration levels are commonly expressed in peak particle velocity (PPV). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings. The response of the human body to vibration relates well to average vibration amplitude. Therefore, vibration impacts on humans are evaluated in terms of vibration velocity. Similar to airborne sound, vibration velocity can be expressed in decibel notation, as vibration decibels (VdB).

## ORGANIZATION

The contents of the Noise Element are focused on a single component, which is Noise and Vibration.

**Figure IX-3 | Railroad Line Operations Noise Contours**



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# GOALS AND POLICIES

## NOISE AND VIBRATION

**Goal N1.1** **Protect City residents from the harmful and annoying effects of exposure to excessive noise.**

**Goal N.12** **Protect the economic base of the City by preventing incompatible land uses from encroaching upon existing or planned noise-producing uses.**

***Policy N1.1*** *The City's exterior noise compatibility standards for uses affected by transportation noise sources are included as Table IX-1. Exterior noise levels shall be mitigated to the extent feasible using site planning, building orientation, and/or other construction techniques or design features. Noise barriers should only be used after other feasible noise reduction strategies are exhausted, and not where they would interrupt existing or future community pedestrian or bicycle connectivity.*

***Policy N1.2*** *The City's interior noise compatibility standards for uses affected by transportation noise sources are 45 dBA $L_{dn}$ for noise-sensitive uses such as residences, lodging, hospitals, assisted living facilities, and other places where people normally sleep. For noise-sensitive uses where people do not sleep, such as offices, schools, and uses with similar noise sensitivity, noise levels should be no greater than 45 dBA $L_{eq}$. Proposed projects should incorporate noise reduction strategies, if necessary, to achieve these interior noise levels.*

***Policy N1.3*** *The City's exterior noise compatibility standards for uses affected by non-transportation-related noise are defined within the City's Noise Ordinance, and should be applied consistent with the Noise Ordinance.*

***Policy N1.4*** *The City will require new transportation improvement projects to be designed to limit noise impacts consistent with the standards contained in Table IX-1, to the extent feasible, through the use of appropriate attenuation techniques.*

***Policy N1.5*** *If existing noise levels exceed the noise compatibility standards in Table IX-1 or Policy N1.2, then feasible methods of reducing noise to levels consistent with standards should be considered, but are not required. However if existing noise levels exceed noise compatibility standards and a project results in a significant increase in noise (as defined below), then feasible methods of reducing noise to avoid a significant noise increase should be applied. In no case should a project result in a Clearly Unacceptable noise level according to Table IX-1.*

- *Where existing exterior noise is less than 60 dB, a ≥ 5 dBA increase in noise is significant.*
- *Where existing exterior noise is between 60 and 65 dBA, a ≥ 3 dB increase in noise is significant.*
- *Where existing exterior noise is greater than 65 dB a ≥ 1.5 dBA increase in noise is significant.*

***Policy N1.6*** *In order to facilitate reinvestment and economic development, if noise mitigation is found to be infeasible or in conflict with other City policies regarding community design, the City may elect to allow noise levels that exceed the noise standards*

*identified in Table IX-1, although in no case should application of this policy result in a Clearly Unacceptable noise level according to Table IX-1.*

***Policy N1.7*** *The City will work in cooperation with Caltrans and the Union Pacific Railroad to maintain noise level standards for both new and existing projects in compliance with Table IX-1.*

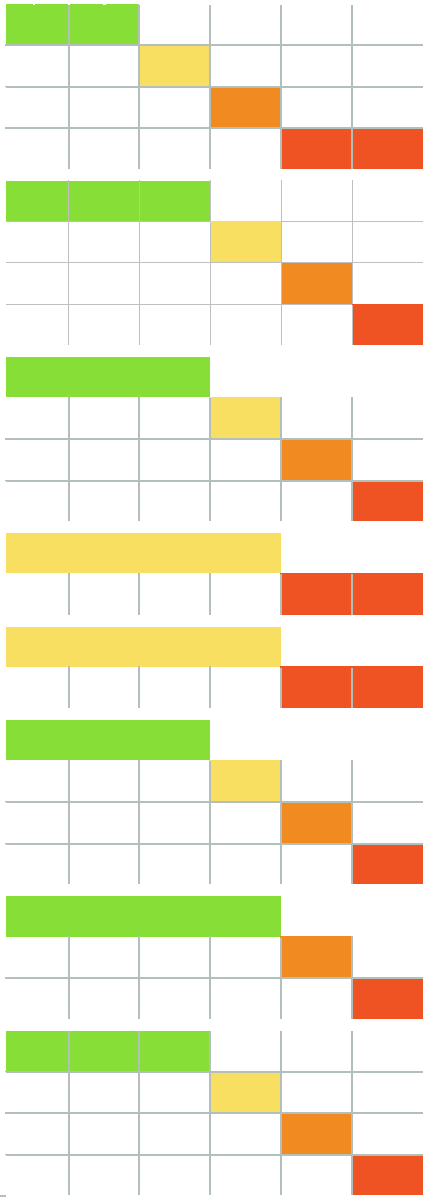
***Policy N1.8*** *Public events, such as school sporting events, community festivals, and similar community and temporary events, and noise associated with emergency vehicles, alarms, or signals are exempt from the noise standards outlined in this Element.*

***Policy N1.9*** *Construction-related noise that is consistent with the City's Noise Ordinance is exempt from the noise standards outlined in this Element.*

***Policy N1.10*** *Include all feasible measures necessary, as a part of proposed development and public infrastructure projects, to avoid substantial annoyance for adjacent vibration-sensitive uses, consistent with California Department of Transportation and Federal Transit Agency guidance.*

**Table IX-1 |** Exterior Noise Compatibility Standards for Uses Affected by Transportation Noise

| Land Use Category* | Community Noise Exposure $L_{dn}$ or CNEL, dBA |
|---|---|
| | 55 60 65 70 75 80 |
| Residential | |
| Lodging – Motels, Hotels | |
| Schools, Libraries, Places of Worship, Hospitals, Assisted Living | |
| Auditoriums, Concert Halls, Amphitheaters | |
| Sports Arena, Outdoor Spectator Sports | |
| Playgrounds, Neighborhood Parks | |
| Golf Courses, Riding Stables, Water Recreation, Cemeteries | |
| Office Buildings | |



***Interpretation***

**Normally Acceptable**
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

**Conditionally Acceptable**
New construction or development should be taken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

**Normally Unacceptable**
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

**Clearly Unacceptable**
New construction or development should generally not be undertaken.

* Land uses not listed on this table will be evaluated according to guidance for the land use category that is most similar with regard to noise sensitivity. The land use-noise compatibility standards apply to outdoor (exterior) activity areas associated with each land use. Outdoor activity areas are the portion of a noise-sensitive property where outdoor activities would normally be expected. Outdoor activity areas for the purposes of this element do not include gathering spaces alongside transportation corridors or associated public rights-of-way.

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Roseville, California Municipal Code

Title 9 HEALTH AND SAFETY

# Chapter 9.24 NOISE REGULATION

9.24.010 Purpose.

9.24.020 Definitions.

9.24.030 Exemptions.

9.24.040 Sound measurement methodology.

9.24.050 Duty to cooperate.

9.24.100 Sound limits for sensitive receptors.

9.24.110 Amplified sound limits for sensitive receptors.

9.24.120 Sound limits for industrial properties.

9.24.130 Sound limits for events on public property.

9.24.140 Operational standards for city activities.

9.24.150 Noise disturbances.

9.24.160 Exceptions.

9.24.190 Railroad train—Excessive noise prohibited.

9.24.200 Violations and penalties.

## 9.24.010 Purpose.

It is declared to be the policy of the city in its exercise of the police power to prohibit unnecessary, excessive and annoying sound levels from all sources. At certain levels, such sounds become noise and are detrimental to the health and welfare of the citizenry and, in the public interest, are hereby systematically proscribed. This chapter is intended to work in concert with and supplement Penal Code Section 370 (Public Nuisances) and Section 415 (Disturbing the Peace) and to establish local community standards for noise regulation. (Ord. 3638 § 1, 2001.)

## 9.24.020 Definitions.

The following words, phrases and terms as used in this chapter shall have the following meanings:

A. “Acoustic specialist” means a person or persons trained in acoustic sampling, qualified to measure sound levels in A-weighted and C-weighted networks and one-third octave band frequencies.

B. “Ambient sound level” means the composite of normal or existing sound from all sources measured at a given location for a specified time of the day or night. The ambient sound level shall be measured with a sound level meter, using slow response and A weighting. The ambient sound level shall be determined with the sound source at issue silent.

C. “Approving authority” means the designated body or persons authorized to grant approval or deny a discretionary permit or an exception to this chapter.

D. “A-weighting” means the standard A-weighted frequency response of a sound level meter, which de-emphasizes low and high frequencies of sound in a manner similar to the human ear for moderate sounds.

E. “C-weighting” means the standard C-weighted frequency response of a sound level meter, which de-emphasizes high frequencies of sound in a manner similar to the human ear for relatively loud sounds.

F. “Decibel” means a unit for measuring the relative amplitude of sound equal approximately to the smallest difference normally detectable by the human ear, whose range includes approximately 130 decibels on a scale beginning with zero decibels for the faintest detectable sound. The sound pressure associated with zero decibels is 20 MicroPascals.

G. “Discretionary permit” means a permit issued by the city other than ministerial permits, including, but not limited to, conditional use permits, tentative subdivision maps, design review permits and administrative permit.

H. “Enforcement officer” means the city manager or designee.

I. “Equivalent hourly sound level ($L_{eq}$)” means the sound level corresponding to a steady state A-weighted sound level containing the same total energy as the actual time-varying sound level over a one-hour period.

J. “Fixed sound source” means a device or machine which creates sounds while fixed or stationary, including, but not limited to, residential, agricultural, industrial and commercial machinery and equipment, pumps, fans, compressors, air conditioners and refrigeration equipment also includes motor vehicles operated on private property.

K. “Intruding sound level” means the sound level created, caused, maintained or originating from an alleged offensive source, measured in decibels, at a specified location while the alleged offensive source is in operation.

L. “Noise” means any loud discordant or disagreeable sound or sounds.

M. “One-third octave band” means a band of frequencies, in Hertz (Hz), which is one-third of an octave wide. The center frequencies of one-third octave bands increase by a factor of 1.26 (cube root of 2). Examples of one-third octave band center frequencies in the range of audible sound include 20, 25, 31.5, 40 and 63 Hertz. Describing sound pressure levels in one-third octave bands provides information as to the tone or pitch, of noise (low frequency versus high frequency), as well as the amplitude of the sound.

N. “Property line or plane” means a vertical plane including the property line that determines the property boundaries in space.

O. “Public property” means any property owned by a public agency and held open to the public, including but not limited to parks, streets, sidewalks, and alleys.

P. “Residential property” means a parcel of real property that is zoned for residential use.

Q. “School” means institutions conducting regular academic instruction at preschool, kindergarten, elementary, secondary or collegiate levels.

R. “Sensitive receptor” means a land use in which there is a reasonable degree of sensitivity to noise. Such uses include single-family and multifamily residential uses, schools, hospitals, churches, rest homes, cemeteries, public libraries and other sensitive uses as determined by the enforcement officer.

S. “Simple tone noise” means any sound that is distinctly audible as a single pitch (frequency) or set of pitches, which includes sound consisting of speech and music.

T. “Sound level” means the sound pressure level in decibels as measured with a sound level meter using the A-weighting and C-weighting networks or one-third octave band frequency. The unit of measurement is referred to herein as dBA, dBC or one-third octave band.

U. “Sound level meter” means an instrument meeting American National Standard Institute Standard S1.4A-1985 for Type I or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment that will provide equivalent data. (Ord. 3638 § 1, 2001.)

## 9.24.030 Exemptions.

Sound or noise emanating from the following sources and activities are exempt from the provisions of this title:

A. Sound sources typically associated with residential uses (e.g., children at play, air conditioning and similar equipment, but not including barking dogs);

B. Sound sources associated with property maintenance (e.g., lawn mowers, edgers, blowers, pool pumps, power tools, etc.) provided such activities take place between the hours of 8:00 a.m. and 9:00 p.m.;

C. Safety, warning and alarm devices, including house and car alarms, and other warning devices that are designed to protect the health, safety and welfare, provided such devices are not negligently maintained or operated;

D. The normal operation of public and private schools typically consisting of classes and other school-sponsored activities;

E. Maintenance (e.g., lawn mowers, edgers, aerators, blowers, etc.) of golf courses, provided such activities take place between the hours of 5:00 a.m. and 9:00 p.m. May through September, and 6:00 a.m. and 9:00 p.m. October through April;

F. Emergencies involving the execution of the duties of duly authorized governmental personnel and others providing emergency response to the general public, including, but not limited to, sworn peace officers, emergency personnel, utility personnel, and the operation of emergency response vehicles and equipment;

G. Private construction (e.g., construction, alteration or repair activities) between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and between the hours of 8:00 a.m. and 8:00 p.m. Saturday and Sunday; provided, however, that all construction equipment shall be fitted with factory installed muffling devices and that all construction equipment shall be maintained in good working order. (Ord. 3638 § 1, 2001.)

## 9.24.040 Sound measurement methodology.

A. Compliance with this chapter shall be determined using methodology described in this section. Sound measurement, except as otherwise provided in this chapter, shall be made with a sound level meter using the A-weighting network at slow meter response, except that fast meter response shall be used for impulsive type sounds.

B. Calibration of the measurement equipment utilizing an acoustical calibrator meeting American National Standards Institute (ANSI) standards shall be performed immediately prior to recording any sound data. Calibration equipment shall be certified annually.

C. Exterior sound levels shall be measured at the property line or at any location within the property of the affected sensitive receptor. Sound measurements shall be taken in such a manner and location so that it can be determined whether sound level standards are exceeded at the property line. Where practical, the microphone of the sound level meter shall be positioned three to five feet above the ground and away from reflective surfaces. The actual location of the sound measurements shall be at the discretion of the enforcement officer. (Ord. 3638 § 1, 2001.)

## 9.24.050 Duty to cooperate.

It is unlawful for any person to refuse to cooperate with or to obstruct any governmental agent, officer or employee in determining the ambient sound level of a sound source. Such cooperation shall include, but is not limited to, the shutting off or quieting of any sound source so that an ambient sound level can be measured. (Ord. 3638 § 1, 2001.)

## 9.24.100 Sound limits for sensitive receptors.

It is unlawful for any person at any location to create any sound, or to allow the creation of any sound, on property owned, leased, occupied or otherwise controlled by such person, which causes the exterior sound level when measured at the property line of any affected sensitive receptor to exceed the ambient sound level by three dBA or exceed the sound level standards as set forth in Table 1, by three dBA, whichever is greater.

**Table 1**

**SOUND LEVEL STANDARDS**
**(for non-transportation or fixed sound sources)**

| Sound Level Descriptor | Daytime (7:00 a.m. to 10:00 p.m.) | Nighttime (10:00 p.m. to 7:00 a.m.) |
|---|---|---|
| Hourly $l_{eq}$, dB | 50 | 45 |
| Maximum level, dB | 70 | 65 |

A. Each of the sound level standards specified in Table 1 shall be reduced by five dB for simple tone noises, consisting of speech and music. However, in no case shall the sound level standard be lower than the ambient sound level plus three dB.

B. If the intruding sound source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient sound level can be measured, the sound level measured while the source is in operation shall be compared directly to the sound level standards of Table 1. (Ord. 3638 § 1, 2001.)

## 9.24.110 Amplified sound limits for sensitive receptors.

In addition to the sound level standards established in Table 1, it is unlawful for any person at any location to produce amplified music or sound which causes the exterior sound level when measured at the property line of any affected sensitive receptor to exceed the sound level standards as set forth in Table 2, below.

**Table 2**

**SOUND LEVEL STANDARDS**
**(for amplified sound)**

| Sound Level Descriptor | Daytime (7:00 a.m. to 10:00 p.m.) | Nighttime (10:00 p.m. to 7:00 a.m.) |
|---|---|---|
| $L_{eq}$, A weighting dBA | 50 | 45 |
| $L_{eq}$, C weighting dBC | 75 | 70 |
| One-third octave band | 10 dB increase in any one-third octave band | |

A. The measurements shall be conducted with the sound level meter set to A-weighting and fast response. Fast response shall be used because the duration between low-frequency tones associated with amplified sound may be considerably less than one second (the average duration represented by the slow meter response). The fast meter response represents one-eighth second intervals.

B. If separation of low frequency tones from the background ambient sound can be determined with the sound level meter on fast response (a clearly identifiable increase in ambient sound levels corresponding to the audible bass sounds), sound levels shall not exceed an $L_{eq}$ of 50 dBA daytime and 45 dBA nighttime for any one minute period.

C. If separation of low frequency tones cannot be determined with the sound level meter on A-weighting, the meter shall be switched to C-weighting to emphasize the low frequency sound. If separation between low frequency tones and ambient levels can be observed with the meter set to the C-weighting scale, the sound level from the low frequency tones shall not exceed an $L_{eq}$ of 75 dBC daytime and 70 dBC nighttime for any one minute period.

D. If existing background sound levels are higher than standards identified in Table 2, then the maximum sound levels due to amplified sound shall not exceed the background sound levels by more than three dB for A-weighted measurements and five dB for C-weighted measurements.

E. If separation of low frequency noise cannot be determined with the meter using either A or C weighting scales and low frequency tones are clearly audible to the acoustics specialist, a sound level measurement in terms of one-third octave band frequencies shall be utilized. If this approach is required, a 10 dB increase in any one-third octave band due to the amplified sound shall be considered a violation of this chapter. (Ord. 3638 § 1, 2001.)

## 9.24.120 Sound limits for industrial properties.

Notwithstanding the provisions of Section 9.24.100, it is unlawful for any person to create any sound, or to allow the creation of any sound, on property with an industrial zoning designation that is owned, leased, occupied or otherwise controlled by such person where an industrial land use shares a common property line with a sensitive receptor or is separated from a sensitive receptor by a roadway, which causes the exterior sound level when measured at the property line of any affected sensitive receptor to exceed the ambient sound level by seven dBA, or exceed the sound level standards as set forth in Table 1 by seven dBA, whichever is greater. (Ord. 3638 § 1, 2001.)

## 9.24.130 Sound limits for events on public property.

Notwithstanding the provisions of Section 9.24.100, sound sources associated with outside activities on public property (e.g. athletic events, sporting events, fairs, and entertainment events) between the hours of 8:00 a.m. and 10:30 p.m., Sunday through Thursday, and between the hours of 8:00 a.m. and 11:00 p.m. on Fridays, Saturdays, and city-recognized holidays, shall not exceed 80 dBA, Lmax at the property line of the property on which the event is being held. (Ord. 3638 § 1, 2001.)

## 9.24.140 Operational standards for city activities.

Notwithstanding any other provisions of this chapter, city operations and activities are not subject to the provisions of this chapter. The city council may, by resolution, adopt operational standards for city activities to effectuate the purposes of this chapter. (Ord. 3638 § 1, 2001.)

## 9.24.150 Noise disturbances.

A. Notwithstanding any other provisions of this chapter, it is unlawful for any person to wilfully make or continue or cause to be made or continued, any loud, unnecessary, excessive or offensive noise or unusual sound which unreasonably disturbs the peace and quiet of any sensitive receptor or which causes discomfort or annoyance to any reasonable person of reasonable sensibilities in the area.

B. In determining whether a violation of the provisions of this section exists the enforcement officer shall consider the following:

1. The volume and intensity of the sound;

2. The vibration intensity of the sound;

3. Whether the nature of the sound is usual or unusual;

4. Whether the origin of the sound is natural or unnatural;

5. The volume and intensity of the background sound, if any;

6. The proximity of the sound to residential sleeping facilities;

7. The nature and zoning of the area within which the sound emanates;

8. The population density of the area within which the sound emanates;

9. The time of the day or night the sound occurs;

10. The duration of the sound; and

11. Whether the sound is recurrent, intermittent, or constant. (Ord. 3638 § 1, 2001.)

## 9.24.160 Exceptions.

A. An exception may be requested from any provision of this chapter. Requests for exceptions shall be made on forms provided by the city manager.

B. If the applicant can show to the city manager, or his or her designee that a diligent investigation of available sound suppression techniques for construction-related noise indicates that immediate compliance with the requirements of this chapter would be impractical or unreasonable, due to the temporary nature or short duration of the exception, a permit to allow exception from the provisions contained in all or a portion of this chapter may be issued. Factors that the approving authority must consider for construction related exceptions shall include but not be limited to the following:

1. Conformance with the intent of this chapter;

2. Uses of property and existence of sensitive receptors within the area affected by sound;

3. Factors related to initiating and completing all remedial work;

4. The time of the day or night the exception will occur;

5. The duration of the exception; and

6. The general public interest, welfare and safety.

C. If the applicant can show to the city manager, or his or her designee that the characteristics of a special event indicate that immediate compliance with the requirements of this chapter would be impractical due to the type of event or unreasonable due to its temporary nature or short duration, a permit allowing an exception from the provisions of this chapter may be issued. Factors considered for special events related exceptions shall include but not be limited to the following:

1. Conformance with the intent of this chapter;

2. Uses of property and existence of sensitive receptors within the area affected by sound;

3. Hardship to the applicant, or community of not granting the exception;

4. The time of the day or night the exception will occur;

5. The duration of the exception; and

6. The general public interest, welfare and safety.

D. If the applicant can show to the city manager, or his or her designee that immediate compliance with the requirements of this chapter would not result in a hazardous condition or nuisance, and strict compliance would be unreasonable due to the circumstances of the requested exception, a permit to allow exception from the provisions contained in all or a portion of this chapter may be issued. Factors considered for all requests for exceptions, other than construction or special events, shall include but not be limited to the following:

1. Conformance with the intent of this chapter and general plan policies;

2. Uses of property and existence of sensitive receptors within the area affected by sound;

3. Factors related to initiating and completing all remedial work;

4. Age and useful life of the existing sound source;

5. Hardship to the applicant, or community of not granting the exception;

6. The time of the day or night the exception will occur;

7. The duration of the exception; and

8. The general public interest, welfare and safety.

E. Within 10 days of receipt of the application, the city manager or his or her designee shall either (1) approve or conditionally approve such request in whole or in part, (2) deny the request, or (3) refer the request directly to the city council for action at the next available council meeting. In the event the exception is approved, reasonable conditions may be imposed which minimize the public detriment and may include restrictions on sound level, sound duration and operating hours, an approved method of achieving compliance and a time schedule for its implementation.

F. Where a request for exception is associated with a discretionary permit, the exception shall be processed concurrently with the discretionary permit. The approving authority for the discretionary permit shall also be the approving authority for the exception. Factors which the approving authority must consider for requests for exception shall be those factors identified in Section 9.24.160(B), 9.24.160(C) and 9.24.160(D), depending upon the type of exception requested. The approving authority for an exception processed with a discretionary permit shall either (1) approve or conditionally approve such request in whole or in part, or (2) deny the request.

G. Where an approving authority or city manager or his or her designee has approved an exception and complaints are received related to the exception the approving body has the authority to take action, as he or she deems necessary to reduce the sound impacts including modification or revocation of the exception.

H. Any person aggrieved by the decision of the approving authority, city manager or his or her designee may appeal to the city council by filing written notice of appeal with the city clerk within 10 days of the decision. The city council's decision shall be final and shall be based upon the considerations set forth in this section. (Ord. 3638 § 1, 2001.)

## 9.24.190 Railroad train—Excessive noise prohibited.

It is unlawful for any person to operate or sound or cause to be operated or sounded, in the operation of any railroad train, between the hours of 10:00 p.m. of one day and 7:00 a.m. of the next day, a train horn or train whistle which creates a noise in excess of 89 dB at any place or point 300 feet or more distant from the source of such sound. (Ord. 3638 § 1, 2001.)

## 9.24.200 Violations and penalties.

A. Violations. Violations of this chapter shall be infractions. Each day any such violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such.

B. Recovery of Costs for Enforcement.

1. When an enforcement officer responds to any property as a result of a noise complaint, the responding officer may issue a citation to the responsible party for violations of this chapter. The citation shall state that the responsible party may be liable and charged for the city's cost of providing noise enforcement for repeat violations or each separate offense following the first violation. No fee shall be assessed unless a written citation had first been issued. Following the issuance of the first citation occurring on a lot or parcel of land the city manager, or his or her designee, shall keep an account of the cost of enforcement of all subsequent violations on this lot or parcel of land.

2. The total cost for enforcement of a second or subsequent violations shall constitute a special security assignment over and above the services normally provided and shall be charged against the responsible party. The city may collect any such costs for enforcement and costs of collection by use of all available legal means.

C. Nonexclusive Remedy.

1. Notwithstanding the provisions of this chapter, the city shall not be prevented from taking any other civil or criminal action to abate any violation of this chapter.

2. For the purposes of this chapter the person charged may be any person or persons in charge of the premises and any person or persons responsible for an activity or event resulting in unlawful noise levels. (Ord. 3638 § 1, 2001.)

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## Contact:

City Clerk: 916-774-5263

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# CONSTRUCTION NOISE MODELING

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/05/2023
Case Description: ROSE-04

**** Receptor #1 ****

Baselines (dBA)

| Description | Land Use | Daytime | Evening | Night |
|---|---|---|---|---|
| Building Demolition | Residential | 60.0 | 55.0 | 50.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Excavator | No | 40 | | 80.7 | 50.0 | 0.0 |
| Front End Loader | No | 40 | | 79.1 | 50.0 | 0.0 |

Results

| | | | Noise Limits (dBA) | | | | Noise Limit Exceedance (dBA) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Calculated (dBA) | | Day | | Evening | | Night | | Day | | Evening | | Night | |
| Equipment | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| Excavator | 80.7 | 76.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Front End Loader | 79.1 | 75.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 80.7 | 79.0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/05/2023
Case Description: ROSE-04

**** Receptor #1 ****

Baselines (dBA)

| Description | Land Use | Daytime | Evening | Night |
|---|---|---|---|---|
| Asphalt Demolition | Residential | 60.0 | 55.0 | 50.0 |

Equipment

| Description | Impact Device | Spec Usage (%) | Actual Lmax (dBA) | Receptor Lmax (dBA) | Estimated Distance (feet) | Shielding (dBA) |
|---|---|---|---|---|---|---|
| Excavator | No | 40 | 80.7 | 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 |
| Excavator | 80.7 | 76.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 80.7 | 76.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/05/2023
Case Description: ROSE-04

**** Receptor #1 ****

Baselines (dBA)

| Description | Land Use | Daytime | Evening | Night |
|---|---|---|---|---|
| Site Preparation | Residential | 60.0 | 55.0 | 50.0 |

Equipment

| Description | Impact Device | Spec Usage (%) | Actual Lmax (dBA) | Receptor Lmax (dBA) | Estimated Distance (feet) | Shielding (dBA) |
|---|---|---|---|---|---|---|
| Dozer | No | 40 | 81.7 | 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 |
| Dozer | 81.7 | 77.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 81.7 | 77.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/05/2023
Case Description: ROSE-04

**** Receptor #1 ****

Baselines (dBA)

| Description | Land Use | Daytime | Evening | Night |
|---|---|---|---|---|
| Rough Grading | Residential | 60.0 | 55.0 | 50.0 |

Equipment

| Description | Impact Device | Spec Usage (%) | Actual Lmax (dBA) | Receptor Lmax (dBA) | Estimated Distance (feet) | Shielding (dBA) |
|---|---|---|---|---|---|---|
| Dozer | No | 40 | 81.7 | 50.0 | 0.0 | |
| Excavator | No | 40 | 80.7 | 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 |
| Dozer | 81.7 | 77.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Excavator | 80.7 | 76.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 81.7 | 80.2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/05/2023
Case Description: ROSE-04

**** Receptor #1 ****

Baselines (dBA)

| Description | Land Use | Daytime | Evening | Night |
|---|---|---|---|---|
| Fine Grading | Residential | 60.0 | 55.0 | 50.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Dozer | No | 40 | | 81.7 | 50.0 | 0.0 |
| Tractor | No | 40 | 84.0 | | 50.0 | 0.0 |
| Front End Loader | No | 40 | | 79.1 | 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 |
| Dozer | 81.7 | 77.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Tractor | 84.0 | 80.0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 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 | 84.0 | 82.8 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/05/2023
Case Description: ROSE-04

**** Receptor #1 ****

Baselines (dBA)

| Description | Land Use | Daytime | Evening | Night |
|---|---|---|---|---|
| Utility Trenching | Residential | 60.0 | 55.0 | 50.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Excavator | No | 40 | | 80.7 | 50.0 | 0.0 |
| Tractor | No | 40 | 84.0 | | 50.0 | 0.0 |
| Front End Loader | No | 40 | | 79.1 | 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 |
| Excavator | 80.7 | 76.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Tractor | 84.0 | 80.0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 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 | 84.0 | 82.6 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/05/2023
Case Description: ROSE-04

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Building Construction | Residential | 60.0 | 55.0 | 50.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Man Lift | No | 20 | | 74.7 | 50.0 | 0.0 |

Results

| Equipment | Calculated (dBA) Lmax | Leq | Noise Limits (dBA) Day Lmax | Leq | Evening Lmax | Leq | Night Lmax | Leq | Noise Limit Exceedance (dBA) Day Lmax | Leq | Evening Lmax | Leq | Night Lmax | Leq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Man Lift | 74.7 | 67.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 74.7 | 67.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/05/2023
Case Description: ROSE-04

**** Receptor #1 ****

Baselines (dBA)

| Description | Land Use | Daytime | Evening | Night |
|---|---|---|---|---|
| Paving | Residential | 60.0 | 55.0 | 50.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Tractor | No | 40 | 84.0 | | 50.0 | 0.0 |
| Front End Loader | No | 40 | | 79.1 | 50.0 | 0.0 |
| Paver | No | 50 | | 77.2 | 50.0 | 0.0 |

Results

| Equipment | Calculated (dBA) Lmax | Calculated (dBA) Leq | Day Lmax | Day Leq | Evening Lmax | Evening Leq | Night Lmax | Night Leq | Day Lmax | Day Leq | Evening Lmax | Evening Leq | Night Lmax | Night Leq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tractor | 84.0 | 80.0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 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 |
| Paver | 77.2 | 74.2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 84.0 | 82.0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/05/2023
Case Description: ROSE-04

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Architectural Coating | Residential | 60.0 | 55.0 | 50.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Compressor (air) | No | 40 | | 77.7 | 50.0 | 0.0 |

Results

| Equipment | Calculated (dBA) Lmax | Leq | Noise Limits (dBA) Day Lmax | Leq | Evening Lmax | Leq | Night Lmax | Leq | Noise Limit Exceedance (dBA) Day Lmax | Leq | Evening Lmax | Leq | Night Lmax | Leq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Compressor (air) | 77.7 | 73.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 77.7 | 73.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/05/2023
Case Description: ROSE-04

**** Receptor #1 ****

Baselines (dBA)

| Description | Land Use | Daytime | Evening | Night |
|---|---|---|---|---|
| Finish/Landscaping | Residential | 60.0 | 55.0 | 50.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Front End Loader | No | 40 | | 79.1 | 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 |
| Front End Loader | 79.1 | 75.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 79.1 | 75.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

## Rose-04 - Construction Noise Attenuation Calculations

**Levels in dBA Leq**

| Phase | RCNM Reference Noise Level | Residential/Church to North | Residential to East | Receptor to West Oakmont High School |
|---|---|---|---|---|
| *Distance in feet* | *50* | *150* | *60* | *570* |
| Building Demolition | 79 | 69 | 77 | 58 |
| *Distance in feet* | *50* | *150* | *130* | *640* |
| Rough Grading P1 & P2 | 80 | 71 | 72 | 58 |
| Fine Grading | 83 | 73 | 75 | 61 |
| Asphalt Demolition P1 and P2 | 77 | 67 | 68 | 55 |
| Site Preparation | 78 | 73 | 75 | 61 |
| Paving | 82 | 72 | 74 | 60 |
| *Distance in feet* | *50* | *100* | *50* | *450* |
| Utility Trenching | 83 | 77 | 83 | 64 |
| Finish & Landscaping | 75 | 69 | 75 | 56 |
| *Distance in feet* | *50* | *250* | *50* | *500* |
| Building Construction | 68 | 54 | 68 | 48 |
| Architectural Coating | 74 | 60 | 74 | 54 |

*Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)*

## Rose-04 - Vibration Damage Attenuation Calculations

**Levels, PPV (in/sec)**

| | **Vibration Reference Level** | **Residences to the North** | **Residences to the East** | **Oakmont High School to the West** | **Church of Christ to the Northeast** |
|---|---|---|---|---|---|
| *Distance in feet* | **at *25 feet*** | *90* | *10* | *400* | *250* |
| Vibratory Roller | 0.21 | 0.031 | 0.830 | 0.003 | 0.007 |
| Large Bulldozer | 0.089 | 0.013 | 0.352 | 0.001 | 0.003 |
| Loaded Trucks | 0.076 | 0.011 | NA | 0.001 | 0.002 |
| Jackhammer | 0.035 | 0.005 | 0.138 | 0.001 | 0.001 |
| Small Bulldozer | 0.003 | 0.000 | 0.012 | 0.000 | 0.000 |
| Static Roller | 0.05 | 0.007 | 0.198 | 0.001 | 0.002 |

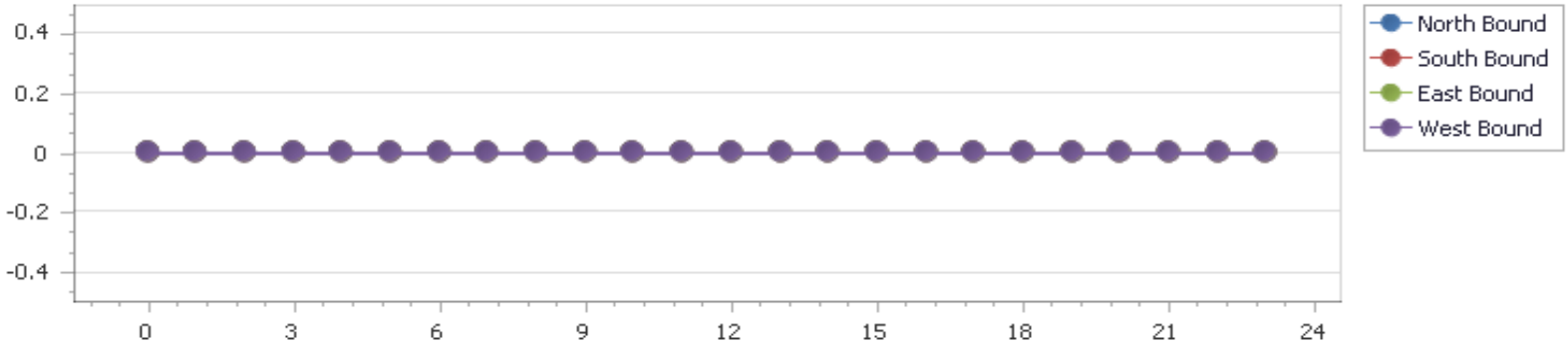
# TRAFFIC NOISE MODELING

# Volume In/Out Per Day

**Report Time:** 01/08/23

**Controller:** 12 Foothills & Misty Wood (332)

**Date:** 1/1/2023 12




| | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hour | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL |
| 0 | 0 | 0 | 0 | 112 | 107 | 219 | 131 | 137 | 268 | 147 | 146 | 293 |
| 1 | 0 | 0 | 0 | 75 | 107 | 182 | 146 | 141 | 287 | 159 | 132 | 291 |
| 2 | 0 | 0 | 0 | 54 | 60 | 114 | 74 | 88 | 162 | 104 | 84 | 188 |
| 3 | 0 | 0 | 0 | 20 | 58 | 78 | 70 | 67 | 137 | 82 | 47 | 129 |
| 4 | 0 | 0 | 0 | 11 | 32 | 43 | 42 | 37 | 79 | 42 | 26 | 68 |
| 5 | 0 | 0 | 0 | 21 | 53 | 74 | 74 | 67 | 141 | 74 | 49 | 123 |
| 6 | 0 | 0 | 0 | 22 | 70 | 92 | 91 | 70 | 161 | 83 | 56 | 139 |
| 7 | 0 | 0 | 0 | 52 | 86 | 138 | 107 | 99 | 206 | 103 | 77 | 180 |
| 8 | 0 | 0 | 0 | 109 | 133 | 242 | 148 | 195 | 343 | 209 | 138 | 347 |
| 9 | 0 | 0 | 0 | 166 | 235 | 401 | 268 | 315 | 583 | 336 | 220 | 556 |
| 10 | 0 | 0 | 0 | 247 | 372 | 619 | 439 | 459 | 898 | 465 | 320 | 785 |
| 11 | 0 | 0 | 0 | 350 | 393 | 743 | 485 | 547 | 1032 | 507 | 402 | 909 |
| 12 | 0 | 0 | 0 | 489 | 471 | 960 | 573 | 661 | 1234 | 594 | 524 | 1118 |
| 13 | 0 | 0 | 0 | 461 | 435 | 896 | 543 | 664 | 1207 | 601 | 506 | 1107 |
| 14 | 0 | 0 | 0 | 414 | 413 | 827 | 467 | 562 | 1029 | 517 | 423 | 940 |
| 15 | 0 | 0 | 0 | 465 | 371 | 836 | 434 | 562 | 996 | 468 | 434 | 902 |
| 16 | 0 | 0 | 0 | 507 | 359 | 866 | 431 | 514 | 945 | 451 | 516 | 967 |
| 17 | 0 | 0 | 0 | 482 | 383 | 865 | 476 | 558 | 1034 | 503 | 520 | 1023 |
| 18 | 0 | 0 | 0 | 379 | 292 | 671 | 349 | 458 | 807 | 412 | 390 | 802 |
| 19 | 0 | 0 | 0 | 304 | 204 | 508 | 256 | 357 | 613 | 325 | 324 | 649 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 0 | 0 | 0 | 195 | 174 | 369 | 227 | 249 | 476 | 223 | 222 | 445 |
| 21 | 0 | 0 | 0 | 156 | 135 | 291 | 181 | 187 | 368 | 160 | 175 | 335 |
| 22 | 0 | 0 | 0 | 105 | 111 | 216 | 135 | 156 | 291 | 158 | 131 | 289 |
| 23 | 0 | 0 | 0 | 109 | 116 | 225 | 99 | 165 | 264 | 184 | 111 | 295 |
| | | | | 5305 | 5170 | 10475 | 6246 | 7315 | 13561 | 6907 | 11418 | 12880 |