May 2023 | Draft Initial Study

GLEN PAUL SCHOOL MODERNIZATION PROJECT

Humboldt County Office of Education

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PLACEWORKS

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1. Introduction

Humboldt County Office of Education (HCOE) intends to construct a new single-story building with classrooms, single-story administration facility building, and reconstruct and modernize a multi-use building on the existing Glen Paul School property, located at 2501 Cypress Avenue, Eureka, in Humboldt County.

1.1 PROJECT LOCATION

The project site is located outside of Eureka City-limits, in an unincorporated area known as Cutten. Located within the City's sphere of influence, Cutten is located approximately 2.5 miles south-southeast of Downtown Eureka and encompasses a total area of 1.3 square miles. The Community of Cutten is located along the northern coast of California in northern Humboldt County approximately 300 miles north of San Francisco and 100 miles south of the Oregon border. The Community of Cutten is approximately 6 miles south of the City of Arcata and approximately 14 miles north of the City of Fortuna (see Figure 1, *Regional Location*). Cutten is located between the inner shoreline of Humboldt Bay and surrounding timber and agricultural lands. The areas closest to Humboldt Bay are at or near sea-level, gaining approximately 200 feet of elevation inland, which characterizes the area as having relatively low and unchanging topography. While the project site is within the City of Eureka's sphere of influence it remains within the jurisdiction of Humboldt County.

As shown in Figure 2, *Local Vicinity and* Figure 3, *Aerial Photograph*, the approximately 3-acre project site is northeast of Cypress Avenue. The project site is comprised of two parcels — Assessor Parcel Numbers 017-071-005 and 017-071-006.

Regional access to the project site is provided via Interstate (I-) 101 (See Figure 1, *Regional Location* and Figure 2, *Local Vicinity*). I-101 intersects Eureka from north to south. Local access to the project site is via Walnut Street and Cypress Avenue (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 an empty grass field, parking lot, and school building. Vegetation onsite consists of grass with trees scattered throughout the site. The project site is relatively flat with elevations ranging from approximately 210 to 211 feet above mean sea level.

1.2.2 Surrounding Land Use

As shown in Figure 3, the project site is surrounded by a mix of residential, public recreational, public facilities, public lands, and timberlands. To the north is vacant land and the Redwoods Fields (zoned R-1); to the south and abutting the project site is Winship Middle School (zoned R-1); to the east is forested land (zoned TPZ); and to the west is single-family residences (zoned R-1).

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 Glen Paul School Modernization Project (Project) would be constructed at 2501 Cypress Avenue, Eureka, California on the existing Glen Paul School property. The proposed project involves the construction of a new single-story classroom building, single-story administration facility building, and reconstruction and modernization of a multi-use building. The Glen Paul School would continue to serve as HCOE's public special education school designed to meet the special education needs of children and youth from ages 3 to 22 in the Humboldt Community. Currently, the student population is approximately 80 students. The school would serve up to approximately 130 students, ages 3 to 22. The anticipated enrollment for fall 2023 is approximately 104 to 130 students.

Figure 4, *Overall Site Plan*, and Figure 5, *Enlarged Site Plan* illustrates the project's site design. The project would be designed as a contemporary public school. As shown in Figures 6a and 6b, *New Classroom Building, Administration Facility Building, and Modernized MTU Facility Exterior Elevations,* the buildings would include fiber cement siding with stucco, stone veneer columns, and a metal roof.

1.3.2 Architectural Design and Character

As shown in Figure 4, the classroom building would provide four classrooms, two shared offices, and eight restrooms. The administration facility building would provide a principal's office, two speech therapist offices, two psychology offices, speech aid office, data clerk office, conference room, staff lounge, work room, IT office, two restrooms, janitor room, and storage and electrical room. These two buildings would be connected as one building with a covered walkway between and encompass approximately 8,456 square feet. The footprint of the multi-use building would not change, and the area demolished and reconstructed would be approximately 9,000 square feet and provide a multi-use room, conference room, principal's office, reception office, speech office, speech therapy room, three offices, two staff restrooms, kitchen and pantry, storage room, laundry room, janitor room.

Architecturally and functionally, the classroom building would be designed and constructed as a single-story building (with a height of 18 feet and four inches) that would connect pedestrians with a covered concrete walkway. Primary entrance to the classroom building would be from the northern side of the building, which faces the playground and walkway.

The administration facility building would be designed and constructed as a single-story building (with heights ranging from 12 feet and six inches to 19 feet and 8 inches) that would connect pedestrians with a covered concrete walkway. Primary entrance to the administration facility building would be from the southern end of the building, which faces the parking lot and school entrance. The front entrance of the building would be the tallest portion of the building at approximately 19 feet and 8 inches.

The multi-use building would be designed and reconstructed as a single-story building (with a height of 18 feet and four inches) that would connect pedestrians with a covered concrete walkway along the perimeter of the building. Primary entrance to the multi-use building would remain unchanged and be from the southern end of the building, which faces the parking lot and drop-off loop.

1. Introduction

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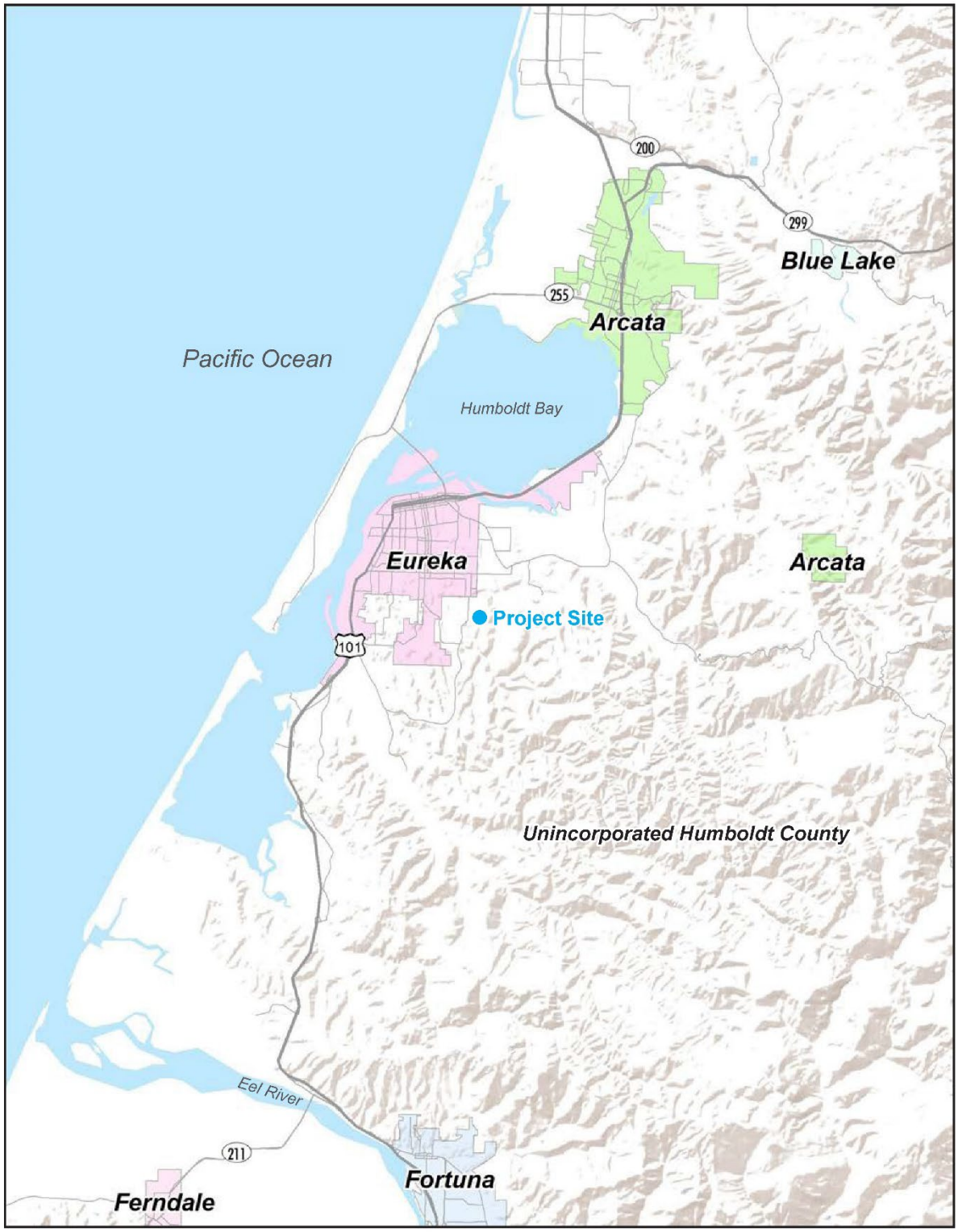
Figure 1 Regional Location



1. Introduction

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Figure 2 Local Vicinity

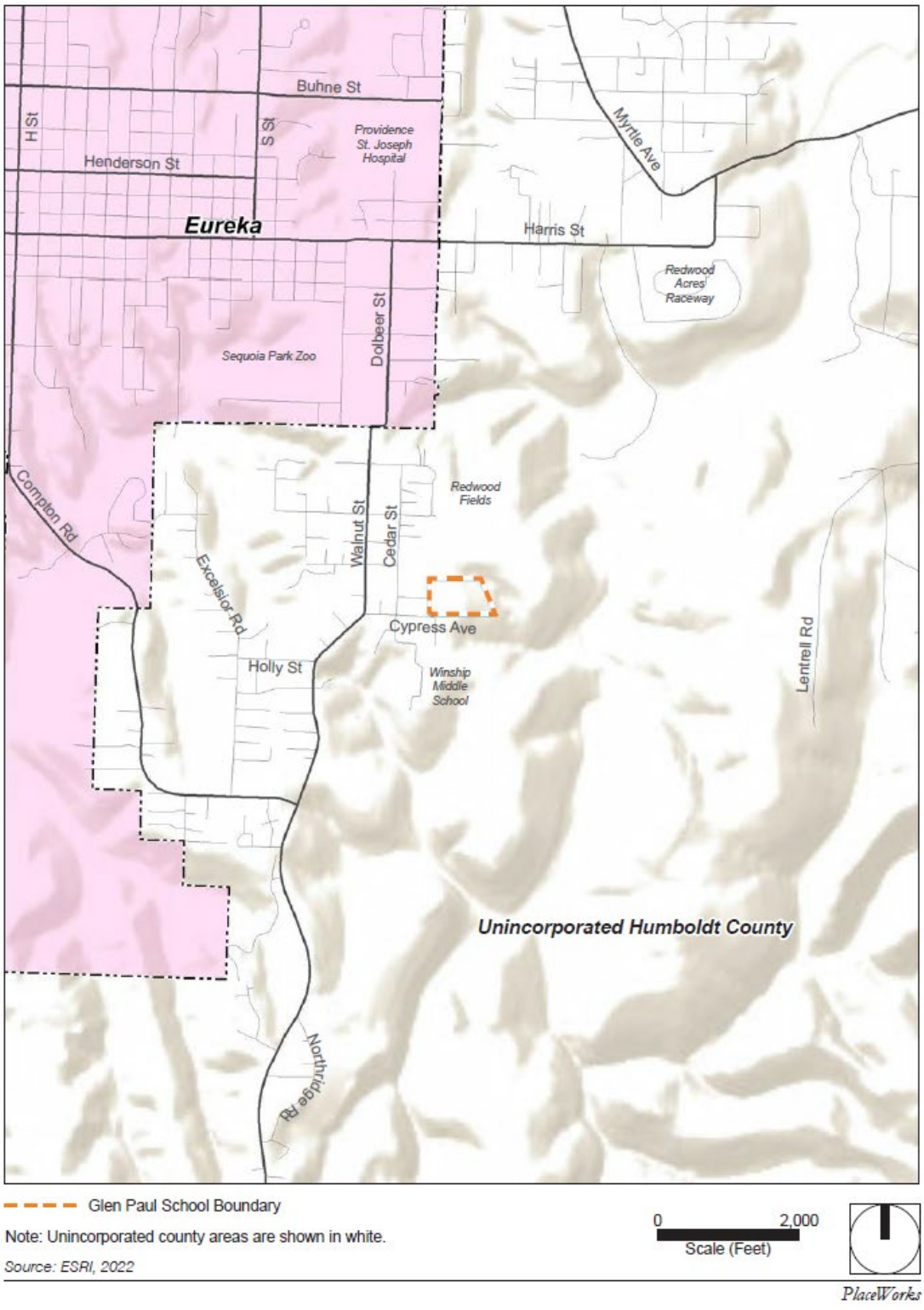

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Figure 3 Aerial Photograph

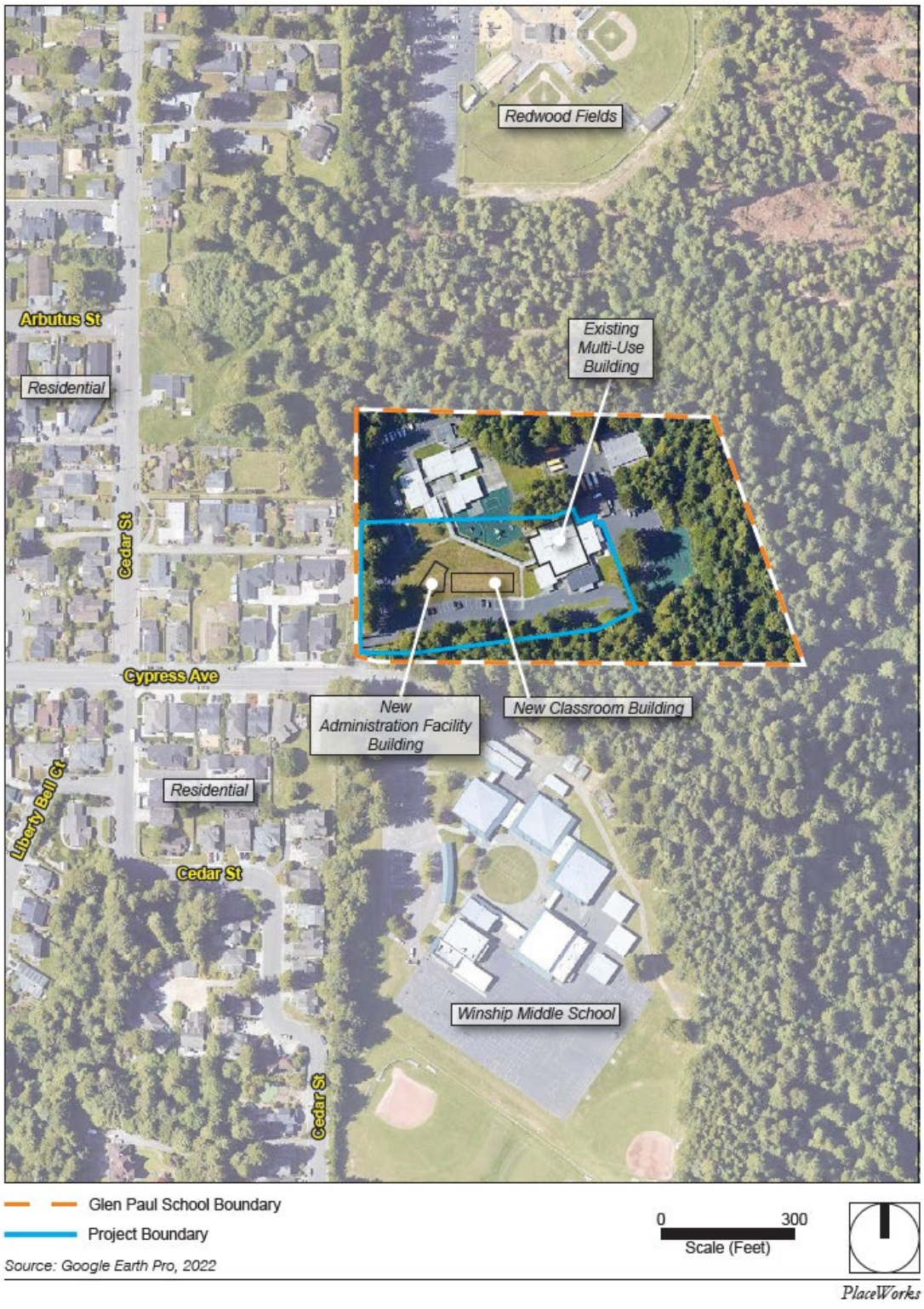

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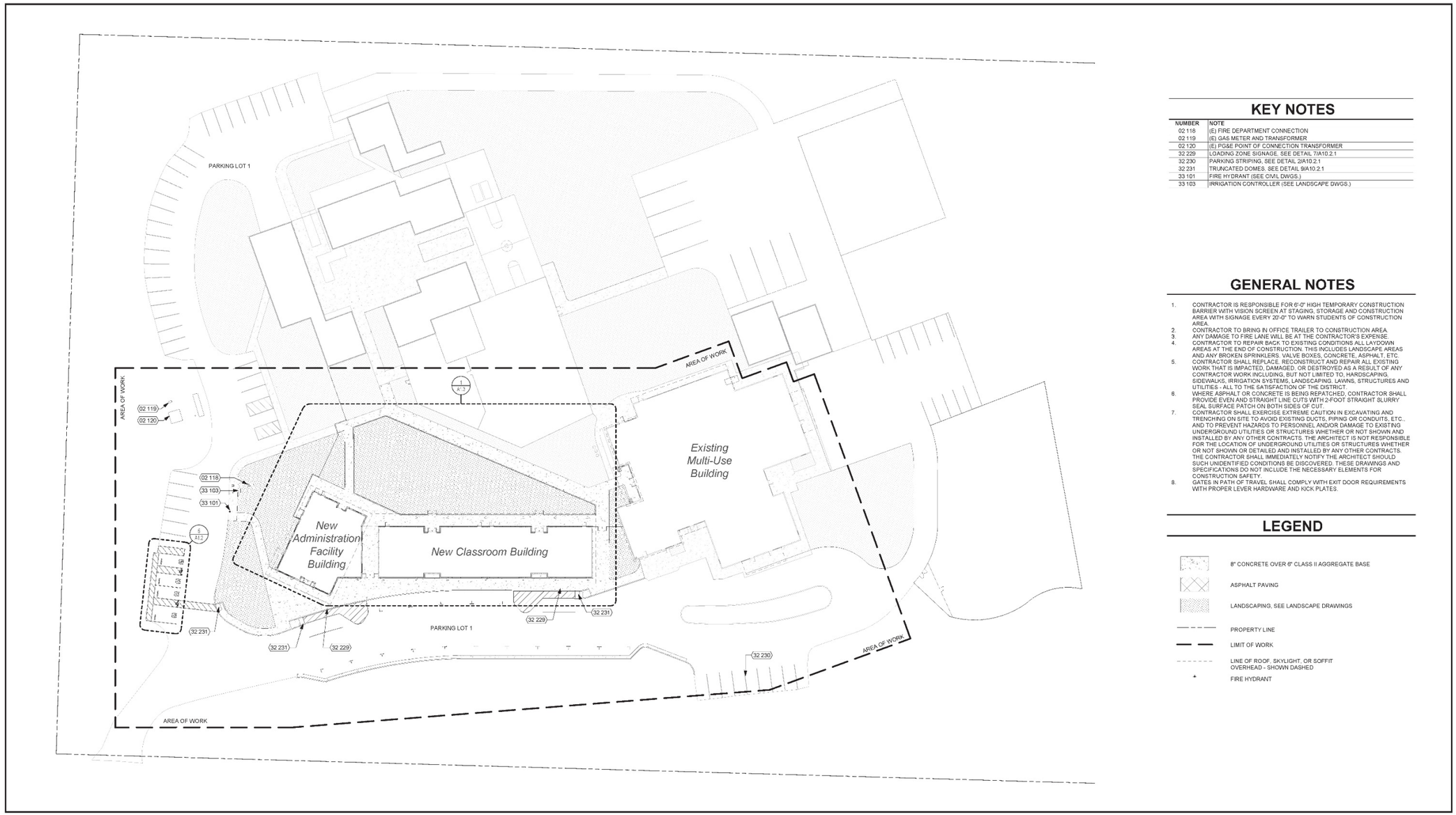
Figure 4 Overall Site Plan



Source: Studio W Architects, 2021

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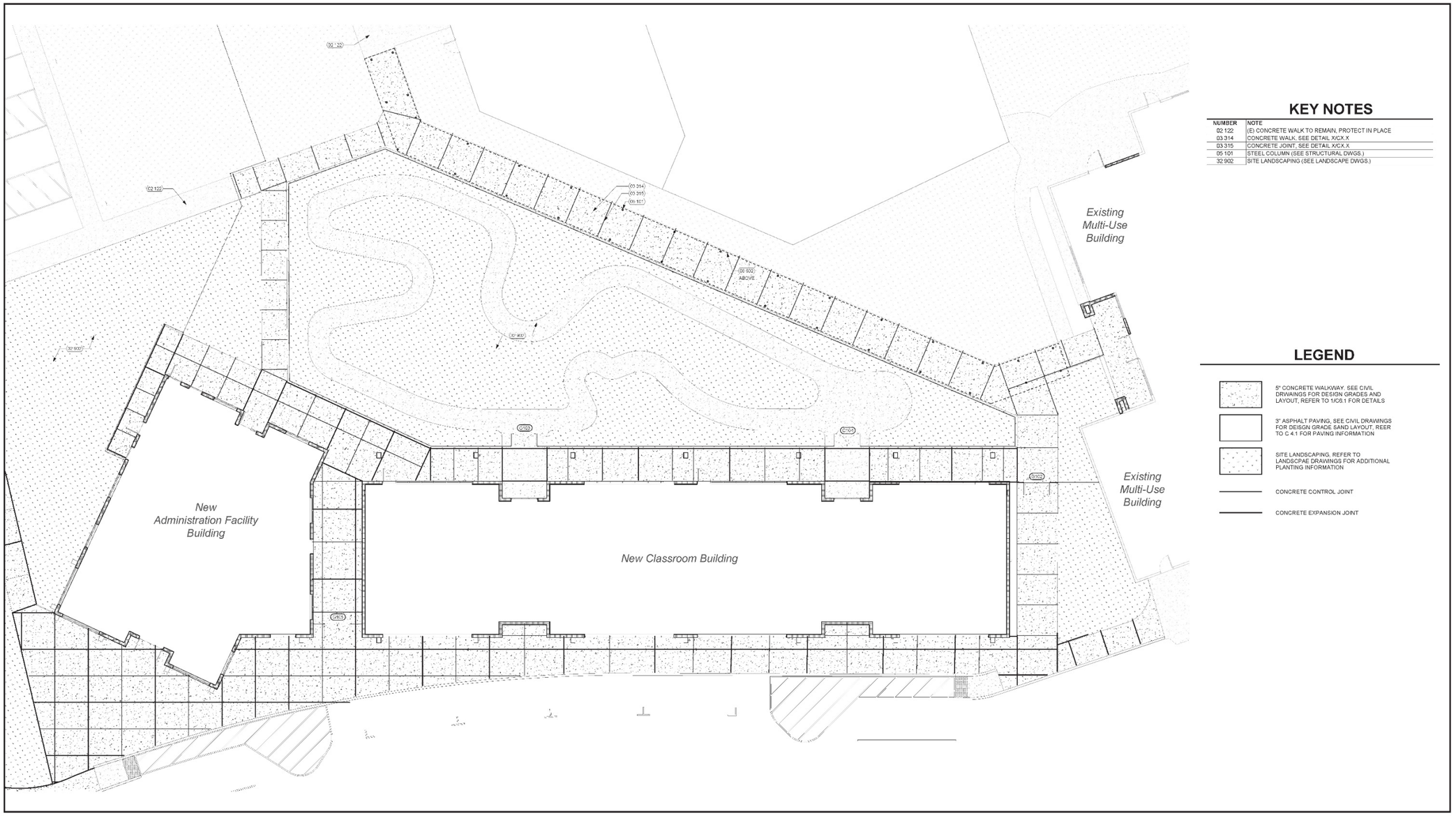
Figure 5 Enlarged Site Plan



Source: Studio W Architects, 2021

1. Introduction

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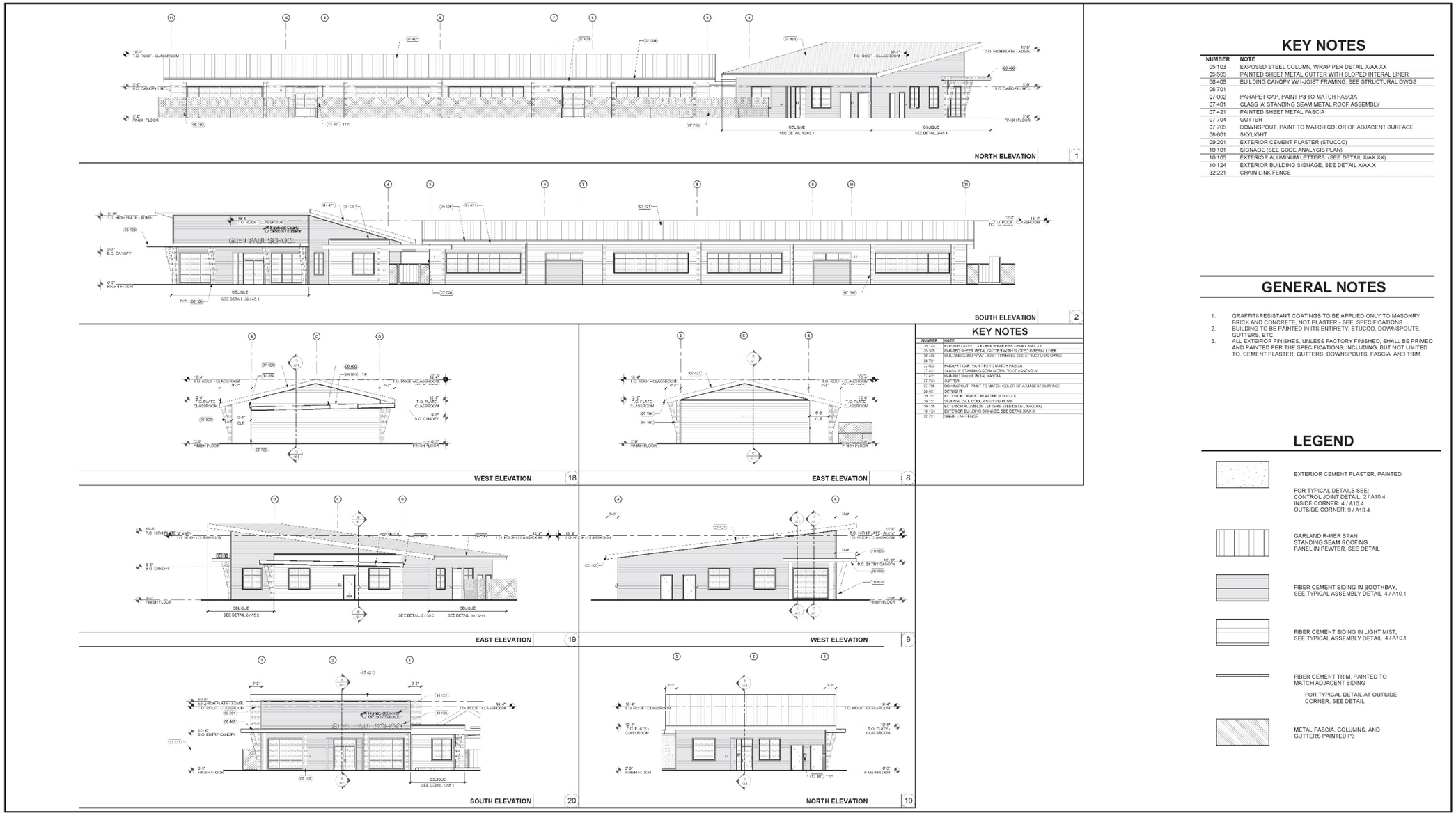
Figure 6a **New Classroom Building, Administration Facility Building, and Modernized MTU Facility Exterior Elevations**



Source: Studio W Architects, 2021

1. Introduction

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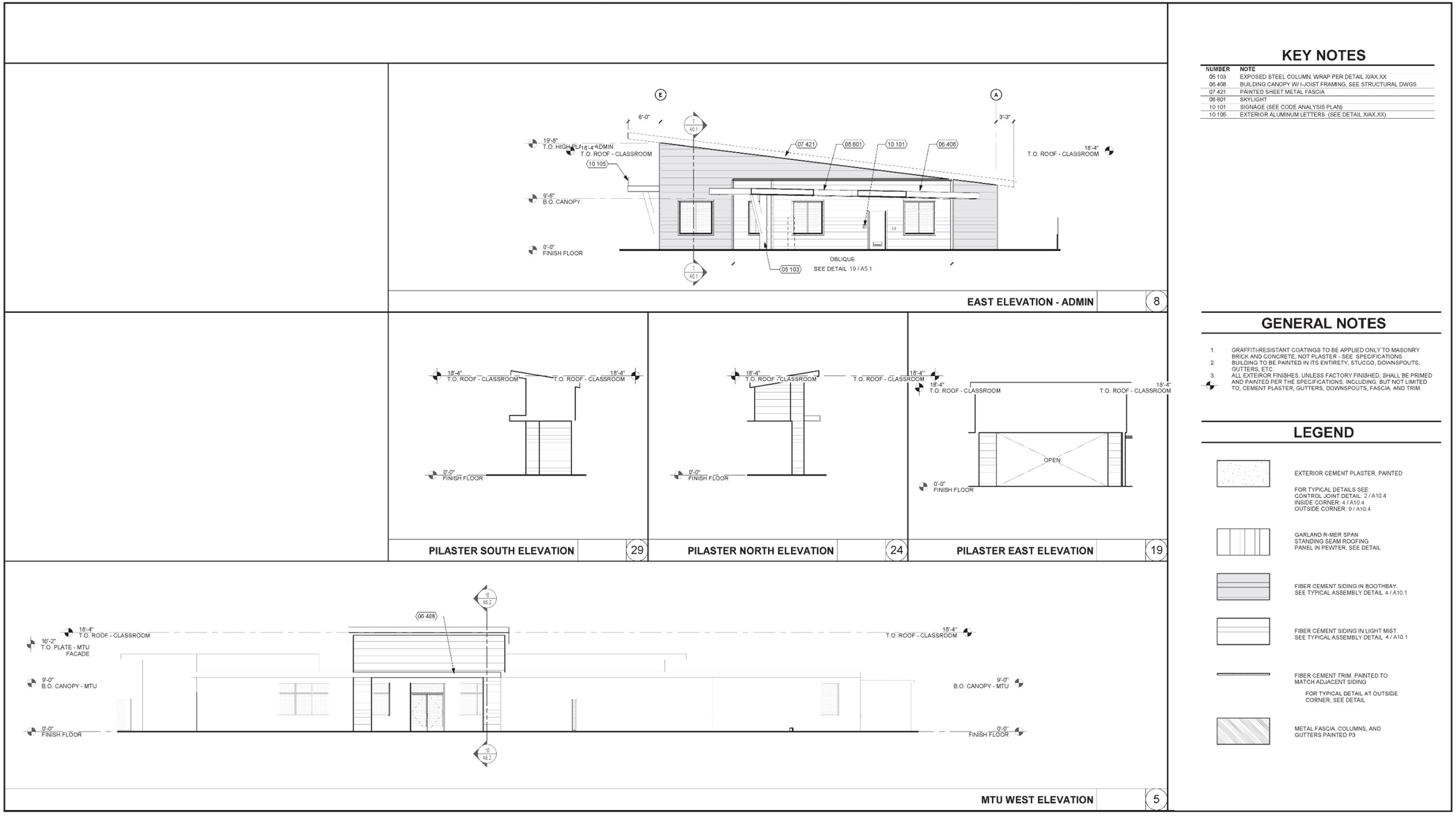
Figure 6b New Classroom Building, Administration Facility Building, and Modernized MTU Facility Exterior Elevations



Source: Studio W Architects, 2021

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1. Introduction

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

1.3.3 Landscaping and Lighting

LANDSCAPING

As shown in Figure 4, *Overall Site Plan*, the project's landscape plan would feature new landscaping to the west of the existing multi-use building, to the north of the proposed classroom building, and to the west and north of the proposed administration facility building. The proposed landscape scheme would include a variety of ornamental trees, shrubs, and groundcover. This would include Japanese maple trees, red camellia, winter heath, heavenly bamboo, foothill sedge, Douglas iris, along with sod lawn and synthetic lawn.

LIGHTING

Light fixtures would be installed inside and around the exterior of the buildings. Currently, there are three large light posts within the project site boundaries that provide lighting for the parking lot.

1.3.4 Access, Circulation, and Parking

VEHICULAR ACCESS AND CIRCULATION

As shown in Figure 3, vehicular access for the project site would be provided via Cypress Avenue. Parents and students would continue to use the drop-off loop (in front of the existing multi-use building) or the parking spaces along the front entrance and western portion of the school property. The path of travel and access points would remain unchanged from the existing conditions of the school site. However, parking lot configuration would be changed to accommodate the design and layout of the proposed buildings and to allow for safe and efficient vehicular circulation. As illustrated in Figure 4 and Figure 5, the parking spaces in the southern portion of the project site and adjacent to the proposed buildings would become parallel parking spaces.

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 Cypress Avenue, which is adjacent to the project site. There are no designated bike lanes or crosswalks near the school property.

STREET NETWORK, BIKE LANES, AND SIDEWALKS

The following paragraphs provide a brief description of the streets that provide access to the school site, the existing bicycle and pedestrian facilities, and the existing transit service in the area.

1. Introduction

Street Network, Bike Lanes, and Sidewalks

Cypress Avenue

Cypress Avenue is a two lane east-west street that extends two blocks from Walnut Street to the Glen Paul School and Winship Middle School campuses. It has parking on both sides of the street and a solid white edge line to separate the travel lanes from the parking areas. This parking area can be used as a bike lane when there are no parked vehicles along the street, but it is technically not a bike lane. Cypress Avenue has sidewalks on both sides of the street that terminate west of the Glen Paul School's access driveway. The speed limit on Cypress Avenue is 25 miles per hour.

Cedar Street

Cedar Street is a two lane north-south street that intersects with Cypress Avenue 475 feet west of the school campus. The intersection of Cypress Avenue and Cedar Street has stop signs on the north and south approaches of Cedar Street. Cedar Street has sidewalks along both sides of the street that have missing segments at some of the properties. There are no bike lanes on Cedar Street and the speed limit is 25 miles per hour.

Walnut Street

Walnut Street is a two lane north-south street that intersects with Cypress Avenue 930 feet west of the school campus. The intersection of Cypress Avenue and Walnut Street is a "T" intersection that has a stop sign on the westbound approach of Cypress Avenue. Walnut Street has sidewalks along both sides of the street and there are no bike lanes. There is a painted yellow school crosswalk across Cypress Avenue at this intersection. The speed limit on Walnut Street is 25 miles per hour and it is also posted as 15 mph when children are present.

Public Transportation

Eureka Transit Service (ETS), which is administered through a joint powers authority with the Humboldt Transit Authority (HTA), provides bus service in the City of Eureka. The bus route nearest Glen Paul School is the Red Route, which runs along Walnut Street. It has a bus stop at the intersection of Walnut Street and Cypress Avenue.

PARKING

As shown in Figure 3, the main parking area for school staff, personnel, and visitors would be in the existing parking lot, near the front entrance, along the western and southern areas of the school site. In the western portion of the project site, there is currently a total of 12 parking spaces. These parking spaces would be reconfigured to include 10 parking spaces, 4 of which would be accessible parking spaces. The 6 existing parking spaces to the west of the project site near the sidewalk would remain unchanged. In the southern portion of the project site near the proposed classroom buildings, there is currently a total of 23 parking spaces, 2 of which are accessible parking spaces. These two handicap parking spaces would provide safe and convenient access as they are situated near the proposed buildings and are easily accessible via a proposed ADA-compliant sidewalk ramp. These parking spaces would be reconfigured to include 6 parallel parking spaces, 2 of which are accessible parking spaces, and 10 new parallel parking spaces immediately to the south and along the existing

curb of the parking lot. The 9 existing parking spaces to the south of the project site near the drop-off loop and adjacent to the multi-use building would remain unchanged.

In total, the proposed project would provide parking spaces for up to 41 vehicles and would include standard and accessible parking spaces. Other parking would continue to be provided outside of the project boundaries in the northwestern and eastern portions of the school site.

1.3.5 Utilities

The following utilities would serve Glen Paul School:

- **Water:** Humboldt Community Services District
- **Wastewater**: Humboldt Community Services District
- **Electricity:** Pacific Gas and Electric Company
- **Natural Gas:** Pacific Gas and Electric Company
- **Solid Waste Collection:** Humboldt Waste Management Authority
- **Cable Television:** AT&T, Suddenlink

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, California Code of Regulations, 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; waterial 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 include but are not limited to:

- 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 School Operations, Students, and Staffing

SCHOOL HOURS AND CALENDAR

Based on the proposed construction timeline (see Section 1.5.9, *Project Phasing and Construction*), it is anticipated that the two newly constructed buildings and reconstructed/modernized multi-use building would be operational for the 2025-2026 school year, which commences in August 2025 Campus hours of operation for Glen Paul School would continue to be from 8:00 am to 5:00 pm, Monday through Friday during normal school months, which is the third week of August through the second week of June (just over 10 months long). The campus would be closed on weekends and holidays unless a special event is scheduled. During normal school months, there would be at least 13 holidays and staff duty days when school is not in session. On these days, the campus traffic is reduced to staff use only. During the holidays, the entire campus would be closed with no activity whatsoever. During the summer months, the school campus would be closed.

STUDENTS AND STAFFING

As noted earlier, the project involves the construction of a new single-story classroom building, single-story administration facility building, and the reconstruction and modernization of a multi-use building on the existing Glen Paul School property. Currently, the student population is approximately 80 students. However, the anticipated enrollment for fall 2023 is approximately 104 to 130 students. The student enrollment capacity for the campus would be for up to 130 students, ages 3 to 22. The campus would have a staff of approximately 64 persons, which would include teachers, administration, and maintenance.

1.3.8 Project Phasing and Construction

Project development is anticipated to be completed in one phase, including the following activities: site preparation, grading and excavation, trenching for site utilities, construction of the new school buildings, reconstruction and modernization of the existing multi-use building, paving, and painting. Overall construction is estimated to take approximately 12 months, extending from June 2024 to June 2025. The project would require approximately 1,500 cubic yards (cy) of cut and approximately 50 cy of fill. In total, this would result in approximately 1,500 cy of soil to be exported and 50 cy of soil that would remain onsite. 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 campus would be operational for the 2025-2026 school year, which commences in August 2025.

1.3.9 Discretionary Actions and Approvals

A discretionary action is an action taken by a government agency (for the project, the government agency is the Humboldt County Office of Education) that calls for an exercise of judgment in deciding whether to approve a project. The Humboldt County Office of Education 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 in 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 buildings; 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," as defined by CEQA Guidelines. The Responsible Agencies, and their corresponding approvals for this project, may include the following:

- 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
- Approval of roadway and stormwater connection improvements. County of Humboldt
  - Approval of any roadway closures needed to implement the improvements.
- County of Humboldt, Division of Environmental Health
  - Approval to operate a food facility.

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 Humboldt County General Plan and Zoning Code (Title 3 of the Humboldt County Municipal Code). The Humboldt County General Plan land use designation of the project site is Public Facility[1] (PF). The project site is zoned Residential One-Family (R-1). The development and design standards and regulations contained in the Humboldt County Zoning Code, which implements the Humboldt County General Plan, constitute the zoning regulations that govern development of the project site. As proposed, the school is permitted under the Public Facility land use designation and Residential One-Family zone district via County approval and issuance of a site plan review.

[1] The Public Facilities designation is utilized to classify land appropriate for use by a governmental agency or public agency, which has the purpose of serving the public health, safety, convenience, or welfare.

1. Introduction

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2. Environmental Checklist

2.1 PROJECT INFORMATION

1. **Project Title:** Glen Paul School Modernization Project

2. **Lead Agency Name and Address:**
Humboldt County Office of Education
901 Myrtle Avenue
Eureka, California 95501

3. **Contact Person and Phone Number:**
Katie Cavanagh, Director of Special Education
707.445.7034

4. **Project Location:**
The project site encompasses APNs: 017-071-005 and 017-071-006, and is located at 2501 Cypress Avenue, Eureka, California.

5. **Project Sponsor's Name and Address:**
Humboldt County Office of Education
901 Myrtle Avenue
Eureka, California 95501

6. **General Plan Designation:**
Public Facilities (PF).

7. **Zoning:**
Residential One Family (R-1).

8. **Description of Project:**
The proposed project involves the construction of a new single-story classroom building, single-story administration facility building, and reconstruction and modernization of a multi-use building on the existing Glen Paul School property. Glen Paul School would continue to serve as HCOE's public special education school designed to meet the special education needs of children and youth from ages 3 to 22 in the Humboldt Community. Currently, the student population is approximately 80 students. school would serve up to approximately 130 students. The anticipated enrollment for fall 2023 is approximately 104 to 130 students.

2. Environmental Checklist

The newly constructed classroom building would provide four classrooms, two shared offices, and eight restrooms. The newly constructed administration facility building would provide a principal's office, two speech therapist offices, two psychology offices, speech aid office, data clerk office, conference room, staff lounge, work room, IT office, two restrooms, janitor room, and storage and electrical room. These two buildings would be connected as one building with a covered walkway between and encompass approximately 8,456 square feet. The footprint of the multi-use building would not change, and the area demolished and reconstructed would be approximately 9,000 square feet and provide a multi-use room, conference room, principal's office, reception office, speech office, speech therapy room, three offices, two staff restrooms, kitchen and pantry, storage room, laundry room, janitor room.

Architecturally and functionally, the classroom building would be designed and constructed as a single-story building (with a height of 18 feet and four inches) that would connect pedestrians with a covered concrete walkway. Primary entrance to the building would be from the northern side of the building, which faces the playground and walkway. Similarly, the administration facility building would be designed and constructed as a single-story building (with heights ranging from 12 feet and six inches to 19 feet and 8 inches) that would connect pedestrians with a covered concrete walkway. Primary entrance to the building would be from the southern end of the building, which faces the parking lot and school entrance. The front entrance of the building would be the tallest portion of the building at approximately 19 feet and 8 inches. The multi-use building would be designed and reconstructed as a single-story building (with a height of 18 feet and four inches) that would connect pedestrians with a covered concrete walkway along the perimeter of the building. Primary entrance to the building would remain unchanged and be from the southern end of the building, which faces the parking lot and drop-off loop.

9. Surrounding Land Uses and Setting:

To the north of the project site is vacant land and the Redwoods Fields; to the south and abutting the project site is Winship Middle School; to the east is forested land; and to the west is 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 (MWELO)
- California Department of Education Plan Approval

Humboldt County

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

County of Humboldt, Division of Environmental Health

- Approval to operate a food facility.

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 tribes are on the HCOE's notification list pursuant to AB 52:

- Bear River Band of the Rohnerville Rancheria
- Big Lagoon Rancheria
- Blue Lake Rancheria
- Cher-Ae Heights Indian Community of the Trinidad Rancheria
- Hoopa Valley Tribe
- Karuk Tribe
- Round Valley Reservation/ Covelo Indian Community
- Shasta Indian Nation
- Shasta Nation
- Tsnungwe Council
- Wiyot Tribe
- Yurok Tribe

As of the time of the publication of this Mitigated Negative Declaration, HCOE received one response via mail from the Cher-Ae Heights Indian Community of the Trinidad Rancheria and two responses via email from Blue Lake Rancheria and the Wiyot Tribe. Blue Lake Rancheria indicated that the Tribe has reviewed records and were unaware of any cultural resources on or immediately adjacent to the school. The Tribe further recommended that inadvertent archaeological discovery protocol be implemented as a project condition for any ground disturbing activities and that the three Wiyot area tribes be notified and consulted if any cultural resources are found. The Wiyot Tribe concurred with Blue Lake Rancheria's recommendation. The Cher-Ae Heights Indian Community of the Trinidad Rancheria indicated that the project area is outside the geographical area of concern for the Trinidad Rancheria and therefore the Tribe has no interest in the project and no information to provide. As such, no consultations have been initiated.

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

2. Environmental Checklist

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	

2. Environmental Checklist

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	
X. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in a substantial erosion or siltation on- or off-site;			X	
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;			X	
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
iv) impede or redirect flood flows?				
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
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

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION. Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?				X
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?				X
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
d) Result in inadequate emergency access?				X
XVIII. TRIBAL CULTURAL RESOURCES.				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or			X	
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.			X	
XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

2. Environmental Checklist

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 located 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.

While the Humboldt County does not have mapped and designated scenic areas or highways, there are policies and standards that seek to ensure that development avoids visual disturbance of natural contours, hilltops, tree lines, bluffs, and rock outcroppings. The project site is located in the unincorporated area of Humboldt County, in an area known as Cutten. The site is situated between urban development and Humboldt Bay to the west and a mix of timberland and forestland distinguished by redwood forests to the east. Views from the project site and these scenic areas are limited and obstructed by the surrounding environment. 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 as a scenic corridor by a federal, state, or local agency. 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.

According to the California Scenic Highway Mapping System, the closest eligible state scenic highway is Highway 101, approximately 2.75 miles to the west (Caltrans 2022). The proposed project would not be visible from nearest state-designated scenic highway (State Route 151), approximately 90 miles to the east. Furthermore, there are no rock outcroppings or historic buildings onsite—the project site is vacant and void

of any buildings and structures. 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?

Less Than Significant Impact. The project site is in a nonurbanized area and is surrounded by residential, public recreational, public facilities, public lands, and timberlands.[2] Grading and construction activities associated with the proposed project have the potential to cause temporary degradation of local aesthetics for residents living close to the project site. However, such activities are temporary and would cease with completion of the proposed project. These activities would be typical of any site in the city that undergoes development or redevelopment. Due to the short-term, temporary nature of construction activities and the non-altering effect on the surrounding neighborhood character, impacts would be less than significant.

Completion of the proposed project would be compatible with surrounding uses. The proposed buildings would be similar in height and character to the buildings already on the school property. Overall, Project development would enhance and strengthen the visual character of the project site and its surroundings through new architecture, landscaping, hardscape, and other improvements onsite. The proposed architectural and landscape elements and design would ensure that development of the Project is not detrimental to the visual character or quality of the surrounding area or uses. The building masses, landscaping, and various hardscape and landscape improvements proposed throughout the project site would be designed to create a sense of cohesiveness on and offsite and along the project site boundaries. Although newer than that of the surrounding area and uses, the proposed buildings, landscaping and site improvements would complement and not detract from the visual character of the site or surrounding area. Therefore, Project development would not

[2] PRC § 21071/CEQA Guidelines § 15191(m)(1). For an unincorporated area, "urbanized area" means an area that satisfies the criteria in both paragraph (1) and (2) below.

1. Is either of the following:
   - A. Completely surrounded by one or more incorporated cities, and both of the following criteria are met:
     - i. The population of the unincorporated area and the population of the surrounding incorporated city or cities equals not less than 100,000 persons.
     - ii. The population density of the unincorporated area at least equals the population density of the surrounding city or cities.
   - B. Located within an urban growth boundary and has an existing residential population of at least 5,000 persons per square mile.
2. The board of supervisors with jurisdiction over the unincorporated area has previously taken both of the following actions:
   - A. Issued a finding that the general plan, zoning ordinance, and related policies and programs applicable to the unincorporated area are consistent with principles that encourage compact development in a manner that does both of the following:
     - i. Promotes efficient transportation systems, economic growth, affordable housing, energy efficiency, and an appropriate balance of jobs and housing.
     - ii. Protects the environment, open space, and agricultural areas.
   - B. Submitted a draft finding to the Office of Planning and Research at least 30 days prior to issuing a final finding, and allowed the office 30 days to submit comments on the draft findings to the board of supervisors.

Bordering the Community of Cutten is the City of Eureka which has a population of less than 100,000 persons.

substantially degrade the visual character or quality of the site and its surroundings. Impacts would be less than significant, and no mitigation measures are necessary.

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 existing school buildings and a parking lot) is surrounded by a mix of by residential, public recreational, public facilities, public lands, and timberlands. Residential uses are considered light-sensitive receptors, which are 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 buildings on the school site would have light fixtures installed inside and around the exterior of the buildings. 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 as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, on the California Important Farmland Finder (DLRP 2016). As the proposed project would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, no impact would occur.

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

No Impact. The project site is zoned R-1 (Residential One-Family) and is not zoned for agricultural use (Humboldt County 2022b). The project site is located on land not enrolled in a Williamson Act contract (Humboldt County 2010). 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 R-1. 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 non-forest 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 single-story classroom building, single-story administration facility building, and the reconstruction and modernization of a multi-use building on the existing Glen Paul School property. The R-1 Zone District is not considered an agricultural zone. As there is no potential to convert farmland to non-farm uses, no impact would occur.

3.3 AIR QUALITY

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

The primary air pollutants of concern for which ambient air quality standards (AAQS) have been established are ozone (O_3), carbon monoxide (CO), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and lead (Pb). Areas are classified under the federal and California Clean Air Act as either in attainment or nonattainment for each criteria pollutant based on whether the AAQS have been achieved. The North Coast Air Basin (NCAB), which is managed by the North Coast Unified Air Quality Management District (NCUAQMD), is designated attainment for all criteria air pollutants under the California and National AAQS except for PM_{10} under the California AAQS (CARB 2022).

Furthermore, the NCUAQMD has identified regional thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROC, CO, NO_x, SO_X, PM_{10}, and $PM_{2.5}$. Development projects below the regional significance thresholds are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard or contribute substantially to an existing or projected air quality violation. Where available, the significance criteria established by the NCUAQMD 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 NCUAQMD is directly responsible for reducing emissions from area, stationary, and mobile sources in the NCAB to achieve National and California AAQS. The NCAB is in attainment for all criteria air pollutants except for coarse inhalable particulate matter (PM_{10}). In 1995, the NCUAQMD prepared the Particulate Matter (PM_{10}) Attainment Plan to assess the sources of air pollution, determine reduction targets, and identify control strategies to achieve attainment with state standards (NCUAQMD 1995). The Attainment Plan establishes goals to reduce PM_{10} emissions and eliminate the number of days in which State standards are exceeded. A consistency determination with the Attainment Plan plays an important role in local agency project review by linking local planning and individual projects to the Attainment Plan. It fulfills the CEQA goal of informing decision makers of the environmental effects of the proposed project under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals in the AQMP. Typically, only large, regionally significant projects have the potential to affect the regional growth projections. In addition, the consistency analysis is generally only required in connection with the adoption of General Plans, specific plans, and significant projects.

Changes in population, housing, or employment growth projections have the potential to affect region's demographic projections and therefore the assumptions in NCUAQMD's Attainment Plan. The project consists of expansion and modernization of the existing Glen Paul School campus to accommodate up to 130 students. As seen in Section 3.14, *Population and Housing*, the proposed project is intended to serve the existing and anticipated future student population and would not result in the creation of housing or infrastructure that would induce unplanned population growth in the area. In addition, no increase in enrollment is anticipated. Therefore, the proposed project would not substantially affect housing, employment, or population projections within the region. Additionally, as demonstrated below in Section 3.3(b), the regional emissions that would be generated by the construction and operation of the proposed project would be less than the NCUAQMD emissions thresholds with implementation of Mitigation Measure AQ-1. Therefore, the proposed project would not be considered by NCUAQMD to be a substantial source of air pollutant emissions that would have the potential to affect the attainment designations in the NCAB. The proposed project would not affect the regional emissions inventory or conflict with strategies in the Attainment Plan. Impacts would be less than significant.

3. Environmental Analysis

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 With Mitigation Incorporated. The following describes project-related impacts from regional short-term construction activities and regional long-term operation of the proposed project.

Regional Short-Term Construction Impacts

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

Construction activities for the school project are anticipated to disturb approximately 1 acre on the project site. The project would involve demolition, site preparation and soil haul, grading, utilities trenching, building construction, paving, architectural coating, and finishing and landscaping. Construction is anticipated to start in June 2024 and finish in June 2025. Construction emissions were estimated using the California Emissions Estimator Model (CalEEMod), Version 2022.1, and are based on the preliminary construction duration and equipment mix provided by HCOE. Because the NCAB is in nonattainment for PM_{10}, uncontrolled PM_{10} emissions could expose the areas that are downwind of construction sites to air pollution from construction activities without the implementation of fugitive dust best management practices. For this reason, the proposed project's criteria air pollutant emissions from construction have been quantified with incorporation of the best management practices found under NCUAQMD Rule 104. The table shows the maximum daily emissions for ROC, NO_x, CO, SO_2, PM_{10}, and $PM_{2.5}$ from construction-related activities would be less than their respective NCUAQMD significance threshold values, except for NOx emissions generated from the building demolition and debris haul, site preparation and soil haul, and grading overlapping construction activities.

Table 1 Maximum Daily Regional Construction Emissions

Construction Phase	Pollutants (lb/day)[1, 2]					
	ROC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 2024						
Building Demolition and Debris Haul, Site Preparation and Soil Haul	3	37	31	<1	6	3
Building Demolition and Debris Haul, Site Preparation and Soil Haul, and Grading	5	**53**	47	<1	9	5
Building Demolition and Debris Haul, and Grading	3	33	33	<1	6	3
Building Demolition and Debris Haul, Grading, and Utility Trenching	4	34	34	<1	6	3
Utility Trenching	<1	1	1	<1	<1	<1
Utility Trenching and Building Construction 2024	1	11	12	<1	<1	<1
Building Construction 2024	1	10	11	<1	<1	<1

Table 1 Maximum Daily Regional Construction Emissions

Construction Phase	Pollutants (lb/day)[1, 2] ROC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 2025						
Building Construction 2025	1	9	11	<1	<1	<1
Building Construction 2025, Paving, and Architectural Coating	33	15	20	<1	1	1
Building Construction 2025, Paving, Architectural Coating, and Finishing/Landscaping	33	16	21	<1	1	1
Maximum Daily Construction Emissions						
Maximum Daily Emissions (lb/day)	33	**53**	47	<1	9	5
NCUAQMD Daily Significance Threshold	**50**	**50**	**500**	**80**	**80**	**50**
Significant?	No	**Yes**	No	No	No	No

Year	Pollutants (tons/year)[1, 2] ROC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Annual Construction Emissions						
Year 2024 Annual Emissions	0.10	0.82	0.91	< 0.005	0.06	0.04
Year 2025 Annual Emissions	0.27	0.55	0.67	< 0.005	0.03	0.02
Maximum Annual Emissions (tons/year)	0.27	0.82	0.91	< 0.005	0.06	0.04
NCUAQMD Annual Significance Threshold	**40**	**40**	**100**	**40**	**15**	**10**
Significant?	No	No	No	No	No	No

Source: CalEEMod Version 2022.1.

[1] Based on the preliminary information provided by HCOE. 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 Sacramento Metropolitan Air Quality Management District of construction equipment.

[2] Includes fugitive dust control measures required by NCUAQMD under Rule 104, including watering disturbed areas a minimum of two times per day, replacing ground cover quickly, and street sweeping.

However, as shown in Table 2, implementation of Mitigation Measure AQ-1, which require use of the EPA's Tier 4 Interim emissions standards for the aforementioned overlapping construction activities, would reduce construction-related NOx emissions below the Sacramento Metropolitan Air Quality Management District (SMAQMD) significance threshold. Therefore, air quality impacts from project-related construction activities would be less than significant with incorporation of mitigation.

Mitigation Measures

Construction

AQ-1 The construction contractor(s) shall, at minimum, use equipment that meets the United States Environmental Protection Agency's (EPA) Tier 4 (Interim) emissions standards for off-road diesel-powered construction equipment used during the building demolition and debris haul, site preparation and soil haul, and grading overlapping construction activities with more than 50 horsepower, unless it can be demonstrated to HCOE that such equipment is not available.

3. Environmental Analysis

Where equipment is not available, the next available engine Tier (e.g., US EPA Tier 3 equipment) shall be used. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by Tier 4 emissions standards for a similarly sized engine, as defined by the California Air Resources Board's regulations.

Prior to construction, the project engineer shall ensure that all plans clearly show the requirement for EPA Tier 4 emissions standards for construction equipment over 50 horsepower for the grading activities stated above. During construction, the construction contractor shall maintain a list of all operating equipment associated with grading in use on the site for verification by HCOE. The construction equipment list shall state the makes, models, and equipment identification numbers and the number of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations.

Table 2 Maximum Daily Regional Construction Emissions

Construction Phase	Pollutants (lb/day)[1, 2]					
	ROC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 2024						
Building Demolition and Debris Haul, Site Preparation and Soil Haul	1	23	29	<1	4	2
Building Demolition and Debris Haul, Site Preparation and Soil Haul, and Grading	1	31	44	<1	7	3
Building Demolition and Debris Haul, and Grading	1	18	30	<1	4	2
Building Demolition and Debris Haul, Grading, and Utility Trenching	1	19	31	<1	4	2
Utility Trenching	<1	1	1	<1	<1	<1
Utility Trenching and Building Construction 2024	1	11	12	<1	<1	<1
Building Construction 2024	1	10	11	<1	<1	<1
Year 2025						
Building Construction 2025	1	9	11	<1	<1	<1
Building Construction 2025, Paving, and Architectural Coating	33	15	20	<1	1	1
Building Construction 2025, Paving, Architectural Coating, and Finishing/Landscaping	33	16	21	<1	1	1
Maximum Daily Construction Emissions						
Maximum Daily Emissions (lb/day)	33	31	44	<1	7	3
NCUAQMD Daily Significance Threshold	**50**	**50**	**500**	**80**	**80**	**50**
Significant?	No	No	No	No	No	No

Table 2 Maximum Daily Regional Construction Emissions

Construction Phase	Pollutants (lb/day)[1, 2]					
	ROC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$

Year	Pollutants (tons/year)[1, 2]					
	ROC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Annual Construction Emissions						
Year 2024 Annual Emissions	< 0.005	0.08	0.12	< 0.005	0.02	0.01
Year 2025 Annual Emissions	0.27	0.55	0.67	< 0.005	0.03	0.02
Maximum Annual Emissions (tons/year)	0.27	0.55	0.67	< 0.005	0.03	0.02
NCUAQMD Annual Significance Threshold	**40**	**40**	**100**	**40**	**15**	**10**
Significant?	No	No	No	No	No	No

Source: CalEEMod Version 2022.1.

[1] Based on the preliminary information provided by HCOE. 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 Sacramento Metropolitan Air Quality Management District of construction equipment.

[2] Includes implementation of Mitigation Measure AQ-1 and fugitive dust control measures required by NCUAQMD under Rule 104, including watering disturbed areas a minimum of two times per day, replacing ground cover quickly, and street sweeping.

Long-Term Operation-Related Air Quality Impact

Typical long-term air pollutant emissions are generated by area sources (e.g., landscape fuel use, aerosols, architectural coatings, and asphalt pavement), energy use (natural gas), and mobile sources (i.e., on-road vehicles). Following buildout of the proposed project, operations would generate a net increase in criteria air pollutant emissions from mobile emissions, area sources, and energy to accommodate a total of 130 students. The proposed project would result in the development of school buildings and associated structures on the project site. The proposed buildings would, at minimum, be designed and built to meet the 2019 Building Energy Efficiency Standards and the 2019 California Green Building Standards Code (CALGreen). As shown in Table 3, it is anticipated that operation of the proposed project would result in a minimal net increase in emissions and would not exceed the NCUAQMD significance thresholds. Impacts to the regional air quality associated with operation of the project would be less than significant.

3. Environmental Analysis

Table 3 Maximum Daily Regional Net Operation Emissions

Source	Maximum Daily Emissions (lbs/Day)					
	ROC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions						
Mobile	1	<1	3	<1	<1	<1
Area	1	<1	2	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Total	1	1	5	<1	<1	<1
NCUAQMD Daily Significance Threshold	**50**	**50**	**500**	**80**	**80**	**50**
Exceeds Threshold?	No	No	No	No	No	No

Source	Maximum Annual Emissions (tons/year)					
	ROC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Maximum Annual Emissions						
Mobile	0.07	0.06	0.38	0.01	0.02	0.01
Area	0.12	0.01	0.17	0.01	0.01	0.01
Energy	0.01	0.04	0.03	0.01	0.01	0.01
Total	0.20	0.11	0.58	0.02	0.03	0.02
NCUAQMD Annual Significance Threshold	**40**	**40**	**100**	**40**	**15**	**10**
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod Version 2022.1.
Notes: lbs: Pounds. Highest winter or summer emissions are reported.

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. The nearest sensitive receptors to the proposed project site are the single-family residences along Berner Lane and Cedar Street to the southwest and Winship Middle School to the south.

Construction Health Risk

The NCUAQMD has not yet adopted guidance for health risk assessments or health risk significance thresholds, but instead recommends use of the California Air Pollution Control Officers Association (CAPCOA) "Health Risk Assessments for Proposed Land Use Projects" guidance document to assess project impacts related to toxic air contaminants (NCUAQMD 2015). However, this document primarily focuses on addressing long-term public health risk impacts from proposed land use projects (CAPCOA 2009). In addition, based on guidance from the Office of Environmental Health Hazards Assessment (OEHHA), cancer risk factor and non-cancer chronic reference exposure level for DPM would be based over a 30-year exposure time frame. Because the proposed project is not a source of toxic air contaminants, as defined in CAPCOA's guidance document, a health risk assessment is not required. In addition, the proposed project is anticipated to be completed in approximately 12 months, which would limit the exposure to onsite and offsite receptors. Thus,

construction emissions would not pose a health risk to onsite and offsite receptors, and project-related construction health impacts would be less than significant.

Operation Phase Community Risk and Hazards

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. These types of major air pollutant emissions sources 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 heavy-duty truck trips (a source of DPM). Therefore, the proposed project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during operation. Impacts would be less than significant.

Carbon Monoxide Hotspots

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

The NCAB has been designated attainment under both the national and California AAQS for CO. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection to more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—in order to generate a significant CO impact (BAAQMD 2017). The student capacity of the public special education school would not increase as a result of the proposed project and therefore would not result in the addition of vehicle exhaust which may result in a CO hotspot or contribute to an existing one. Therefore, the proposed project would not substantially increase CO hotspots at intersections and impacts would be less than significant.

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

Less Than Significant Impact. The proposed project would not result in objectionable odors. The threshold for odor is if a project creates an odor nuisance pursuant to Section A.1. of NCUAQMD Rule 104, Prohibitions, which states that for Public Nuisance:

> 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 to the public or which endanger the health, comfort, repose 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.

According to the CARB *Air Quality and Land Use Handbook: A Community Health Perspective*, the types 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 (CARB 2005). The proposed project involves development of new public special education school buildings and would not fall within the objectionable odors land uses. Emissions from construction equipment, such as diesel exhaust and volatile organic compounds from architectural coatings and paving activities may generate odors. However, these odors would be low in concentration, temporary, and would not affect a substantial number of people. Odor impacts would be less than significant.

3.4 BIOLOGICAL RESOURCES

Would the project:

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

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 used 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 onsite. Therefore, no impact would occur and no mitigation measures are necessary.

Special Status Species

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

[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.

Special Status Plants

The project site is previously disturbed and developed as a school. 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 with an empty grass field. 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 school boundaries. Therefore, impacts would be less than significant.

Special Status Wildlife

Five special-status bird species have potential to occur on the project site, including Cooper's Hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), Vaux's swift (*Chaetura vauxi*), olive-sided flycatcher (*Contopus cooperi*), and Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*). Considering the managed nature and regular use of the project site, special-status birds are expected to choose less disturbed habitat for nesting and roosting. However, potential habitat exists for a small number of special-status birds. In addition, native migratory birds may also be present at the project area. All locations with tall grass or a shrub or tree canopy layer within the project area may provide suitable nesting habitat for a diverse assemblage of migratory birds.

The western, southern, and northeastern perimeter of the project site consists of mature coastal redwood and Sitka spruce trees; the remaining portion of the site is developed and consists of a parking lot entrance with pavement and sidewalks, as well as the existing multi-use building and a large grass field where the two new buildings are proposed. There are some ornamental trees scattered throughout the site and along the sidewalk adjacent to the school playground. However, tree or vegetation removal may 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 commencement 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

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 ground disturbance (e.g., tree/vegetation removal, mass grading) during the nesting season (February 1 – 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 located 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 located within the project site onsite. 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 (MBTA) (50 Code of Federal Regulations (CFR) 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 signification 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 onsite 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 coastal redwood and Sitka spruce trees. Tree or vegetation removal may 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-3, a pre-construction nesting bird survey is required within 14 days of the commencement ground disturbance during the nesting season. Additionally, per mitigation measure BIO-4, 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

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 ground disturbance (e.g., tree/vegetation removal, mass grading) during the nesting season (February 1 – 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.

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

No Impact. Humboldt County 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). 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 in Figure 3, *Aerial Photograph*, the project site is located on land that has been mostly developed as a school with classroom buildings, school facilities, playground, and parking lot. Project development would involve construction of a classroom building, administration facility building, and reconstructed multi-use building, totaling approximately 16,240 square feet. 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. The site does not include 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 Eureka Inn, approximately 2.6 miles to the northwest. 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 mostly developed as a school with classroom buildings, school facilities, playground, and parking lot. The surrounding lands include vacant land and the Redwoods Fields to

the north, Winship Middle School to the south, forested land to the east, and single-family residences to the west.

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.

CUL-1 Prior to ground disturbance by project site clearance and grading, HCOE shall retain a qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, 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. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for precontact and historic archaeologist, shall be retained to 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, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Humboldt County Coroner (as per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 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 Native American Heritage Commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the Project (§ 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 HCOE does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, HCOE must rebury the remains where they will not be further disturbed (§ 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 as the site is already developed as a school, 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. The following discusses the potential energy demands from construction activities associated with the construction and operation of the public special education school.

Short-Term Construction Impacts

Electrical Energy

Construction of the proposed project would not require electricity to power most construction equipment. Electricity use during construction would vary during different phases of construction. The majority of construction equipment during would be gas- or diesel-powered, and electricity would not be used to power most of the construction equipment. Later construction phases could result in the use of electricity-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. Therefore, project-related construction activities would not result in wasteful or unnecessary electricity demands, and impacts would be less than significant.

Natural Gas Energy

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

Transportation Energy

Transportation energy use depends on the type and number of trips, vehicle miles traveled, fuel efficiency of Transportation energy use during construction of the proposed project would come from delivery vehicles and construction employee vehicles. In addition, transportation energy demand would come from use of off-road construction equipment. It is anticipated that the majority of off-road construction equipment, such as those used during grading, would be gas or diesel powered. The use of energy resources by these vehicles would fluctuate according to the phase of construction.

To limit wasteful and unnecessary energy consumption, the construction contractors are anticipated to minimize nonessential idling of construction equipment during construction, in accordance with 13 CCR § 2449. In addition, construction trips would only occur as needed and extraneous consumption of fuel would be avoided within reason in the interest of saving costs for HCOE and by the project contractors. Furthermore, electrical energy would be available for use during later construction activities, following installation of power lines and connections, precluding the use of less efficient generators. Moreover, all construction equipment would cease operating upon completion of project construction. Thus, energy use during construction of the proposed project would not be considered inefficient, wasteful, or unnecessary. Impacts would be less than significant.

Long-Term Impacts During Operation

Operation of the proposed project would generate new demand for electricity, natural gas, and transportation energy on the project site. Operational use of energy would include heating, cooling, and ventilation of buildings; water heating; operation of electrical systems, use of on-site equipment and appliances; and indoor, outdoor, and perimeter lighting.

3. Environmental Analysis

Electrical Energy

Operation of the proposed project would consume electricity for various purposes, including but not limited to heating, cooling, and ventilation of buildings, water heating, operation of electrical systems, lighting, and use of on-site equipment and appliances. Electrical service to the proposed project would be provided by Pacific Gas and Electric (PG&E) connections to existing off-site electrical lines and new on-site infrastructure. As shown in Table 4 implementation of the proposed project would result in a net increase of 82,610 kilowatt hours of electricity use per year.

Table 4 Electricity Consumption

Land Use	Electricity (kWh/year)
Proposed Project Conditions	
Proposed Buildings	78,629
Parking Lot	3,981
Total	82,610

Source: CalEEMod Version 2022.1.

While the proposed project would result in a higher electricity demand than existing conditions onsite, it would be consistent with the requirements of the Building Energy Efficiency Standards and CALGreen. Furthermore, reconstructed multi-use building would be more energy efficient than the existing building, based on compliance with the latest Building Energy Efficiency Standards and CALGreen. Therefore, operation of the proposed project would not result in wasteful or unnecessary electricity demands and would not result in a significant impact related to electricity.

Natural Gas Energy

The potential natural gas consumption for the project site is shown in Table 5. As shown in the table, implementation of the proposed project would generate a net increase natural gas demand by 766,152 kilo British thermal units per year, primarily due to natural gas use by the new buildings. While the proposed project would result in a higher natural gas demand than existing conditions onsite, it would be consistent with the requirements of the Building Energy Efficiency Standards and would not result in wasteful or unnecessary natural gas demands. Therefore, operation of the proposed project would result in less than significant impacts with respect to natural gas usage.

Table 5 Natural Gas Consumption

Land Use	Natural Gas (kBTU/year)
Proposed Project Conditions	
Proposed Buildings	766,152

Source: CalEEMod Version 2022.1
Note: kBTU = kilo British thermal units.

Transportation Energy

The proposed project would consume transportation energy during operations from the use of motor vehicles. The efficiency of these motor vehicles is unknown, such as the average miles per gallon. Estimates of transportation energy use are based on the overall vehicle miles traveled (VMT) and associated transportation energy use. As seen in Section 3.14, *Population and Housing*, the proposed project is intended to serve the existing and anticipated future student population and would not result in the creation of housing or infrastructure that would induce unplanned population growth in the area. In addition, as seen in Section 3.17, *Transportation*, while the proposed project could result in an increase of up to 50 students at this school site, the traffic associated with these students would be traveling on the area's roadway network regardless of the status of this project. The demand is generated by the number of eligible and age-appropriate students in the area and is not generated by the size of the school's buildings. It is anticipated that the new buildings would result in an increase of ten or fewer employees at the school, which would generate a maximum of 20 to 25 vehicle trips per day, which is below the CEQA VMT threshold of 110 trips per day. Therefore, impacts would be less than significant with respect to operation-related fuel usage.

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

No Impact. The state's electricity grid is transitioning to renewable energy under California's Renewable Energy Program. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. Electricity production from renewable sources is generally considered carbon neutral. Executive Order S-14-08, signed in November 2008, expanded the state's renewable portfolios standard (RPS) to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Senate Bill 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. Senate Bill 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures. On September 10, 2018, Governor Brown signed SB 100, which supersedes the SB 350 requirements. Under SB 100, the RPS for public owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. Additionally, SB 100 also established a new RPS requirement of 50 percent by 2026. The bill also established a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under SB 100 the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target. In addition, 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.

The statewide RPS goal is not directly applicable to individual development projects, but to utilities and energy providers such as PG&E, which is the utility that would provide all of electricity needs for the proposed project. Since 2017, 33 percent of PG&E's electricity is generated from renewable energy, and by 2030, PG&E is set to meet the State's new 60 percent renewable energy mandate set forth in SB 100 (PG&E 2022). Compliance of PG&E in meeting the RPS goals would ensure the State in meeting its objective in transitioning to renewable

energy. The net increase in energy demand associated with implementation of the proposed project would be within the service capabilities of PG&E and would not impede their ability to implement California's renewable energy goals. In addition, the proposed project also would comply with the latest Building Energy Efficiency Standards and CALGreen. The proposed project would also be required to implement Mitigation Measures GHG-1 and GHG-2, which would require new buildings to be all electric and require installation of EV chargers to comply with CALGreen Tier 2 EV charging requirements, respectively. These mitigation measures would ensure that the proposed project would rely more on renewable energy sources, which would be consistent with the RPS goals to increase sales for electricity generated from eligible renewable resources. Therefore, implementation of the proposed project would not conflict or obstruct plans for renewable energy and energy efficiency and no impact would occur.

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 known active fault is the Little Salmon fault, which is mapped approximately 3 miles to the southwest of the project site. The nearest fault within the Mad River fault zone, the Fickle Hill fault, is nearly 8 miles to the north of the project site. While the proximity of the fault zone 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. The Eureka region is located at the southern end of the Cascadia Subduction Zone, which is a tectonically active region with high seismic activity. Historic seismicity and paleoseismic studies in the area suggest sources of damaging earthquakes in the Eureka region can come from the Gorda Plate (a fragment of the Juan de Fuca plate); the Mendocino fault; the Mendocino Triple Junction; the northern end of the San Andreas fault; faults within the North American Plate (including the Little Salmon fault and the Mad River fault zone); and offshore faults from the Cascadia Subduction Zone in general (City of Eureka, 2018). Due to the dynamic crustal deformation near the Mendocino Triple Junction, there is a high level of seismicity in the north coast region of California, which is the most seismically active region in the continental United States. However, no known active fault crosses the project site. However, the nearest active fault is the Little Salmon fault, approximately 3 miles to the southwest of the project site. Although seismic activity from the Little Salmon fault 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. According to the Humboldt County GIS system, the project site is not susceptible to post-liquefaction settlement and lateral spreading that would be detrimental to the proposed site improvements (Humboldt County 2022b). Consequently, the potential for liquefaction of the soil and rock beneath the site is considered low. Therefore, 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 located 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 relatively 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 (BMPs) 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, coupled with maintained landscaping, will reduce the potential for erosion during operation. Compliance with BMPs is required by the federal and state Clean Water Act and is administered by the Humboldt County. 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 previously 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 the Hookton-Tablebluff complex (Hookton [45%] and Tablebluff [40%] soils). The Hookton-Tablebluff complex is characterized by its moderately well-drained soils. Hookton soils contain 27 to 35 percent clay material and Tablebluff soils contain 20 to 33 percent clay material. Due to the concentration of clay materials within the soil, the project site may be subjected to expansive soil (UC Davis & NRCS 2021). 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 soil 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 waste water disposal systems where sewers are not available for the disposal of waste water?

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. As such, the proposed project will 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

Scientists have concluded that 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.[4]

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.[5] Black carbon emissions are not included in the GHG analysis because the California Air Resources Board (CARB) does not include this pollutant in the state's Senate Bill 32 (SB 32) inventory and treats this short-lived climate pollutant separately.[6] A background discussion on the GHG regulatory setting and GHG modeling can be found in Appendix A to this Initial Study.

Would the project:

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

Less Than Significant Impact. Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough greenhouse gas emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact.

Project-related construction and operation-phase GHG emissions are shown in Table 6. Implementation of the proposed project would result in the expansion and modernization of the existing Glen Paul school campus. While there would be an increase in area sources (e.g., consumer cleaning products) and energy usage (i.e., natural gas and electricity) as a result of the new buildings, the proposed project would not result in an increase

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

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

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

in student capacity. Therefore, the proposed project would not increase mobile emissions, water demand, wastewater, and solid waste generation.

The NCUAQMD has not yet adopted a qualified GHG reduction plan, policy, or regulation and has not yet adopted a quantified GHG significance threshold. Therefore, thresholds and guidance adopted by other nearby air districts are used for the purpose of this analysis. SMAQMD is the closest air district that has adopted a GHG significance threshold for GHG emissions from construction and operation of a project, which is 1,100 metric tons of carbon dioxide equivalent ($MTCO_2e$) per year with implementation of BMPs for GHG emissions, which would require all buildings to use all electric energy systems and include parking stalls with electric vehicle (EV) capable charging stations consistent with the 2019 California Green Building Standards Code (CALGreen) voluntary Tier 2 nonresidential measures. Without these BMPs, the proposed project would have the potential to have significant impacts on the environment. The SMAQMD has developed this threshold to ensure that new GHG emissions would be reviewed and assessed for mitigation, thereby contributing to GHG emissions reduction goals of AB 32, SB 32, the Scoping Plan, and Executive Order B-30-15 (SMAQMD 2018).

Annual average construction emissions were amortized over 30 years and included in the emissions inventory to account for one-time GHG emissions from the construction phase of the project. Overall, development and operation of the proposed project would not generate a net increase in annual emissions that would exceed the SMAQMD threshold of 1,100 metric tons of carbon dioxide equivalent ($MTCO_2e$) per year. Therefore, the proposed project's cumulative contribution to GHG emissions would be less than significant.

Table 6 Project-Related GHG Emissions

Source	GHG Emissions	
	$MTCO_2e$ Per Year	**Percent Proportion**
Construction		
Total Construction Emissions	276	NA
30-Year Amortized Construction	9	NA
SMAQMD GHG Threshold	**1,100 $MTCO_2e$/Yr**	**NA**
Exceeds Threshold?	**No**	**NA**
Operations[2]		
Mobile	53	43%
Area	1	1%
Energy[3]	61	50%
Water	<1	<1%
Solid Waste	7	6%
Refrigeration	<1	<1%
Total Emissions	122	**100%**
SMAQMD GHG Threshold	**1,100 $MTCO_2e$/Yr**	**NA**
Exceeds Threshold?	**No**	**NA**

Source: CalEEMod, Version 2022.1.

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

[1] Total construction emission are amortized over 30 years per SMAQMD methodology.

Table 6 Project-Related GHG Emissions

Source	GHG Emissions	
	$MTCO_2e$ Per Year	**Percent Proportion**
Construction		
Total Construction Emissions	276	NA
30-Year Amortized Construction	9	NA
SMAQMD GHG Threshold	**1,100 $MTCO_2e$/Yr**	**NA**
Exceeds Threshold?	**No**	**NA**
Operations[2]		
Mobile	53	43%
Area	1	1%

[2] Emissions from mobile sources, water use, wastewater generation, and solid waste generation have been calculated based on an increase of 50 students to account for the student capacity of 130 students upon buildout of the proposed project. Overall, these students are currently generating these uses elsewhere in the school District and these emissions have been have been calculated for the purpose of a conservative analysis.

[3] GHG emissions from energy conservatively do not consider incorporation of Mitigation Measures GHG-1 and GHG-2. Implementation of these mitigation measures would further reduce energy-related GHG emissions.

Project Design Features

GHG-1 The Humboldt County Office of Education shall design and construct all buildings to use all electric energy systems, meaning that electricity is the primary source of energy for water heating; mechanical; heating, ventilation, and air conditioning (HVAC) (i.e., space-heating). the design requirements specified above shall be noted and/or reflected on all building plans submitted to the Division of State Architect.

GHG-2 The Humboldt County Office of Education shall identify and include parking stalls with EV capable charging stations consistent with the 2019 California Green Building Standards Code (CALGreen) voluntary Tier 2 nonresidential measures to provide the appropriate amount of EV charging stations for the proposed parking spaces, as seen on Table A5.106.5.3.2 of the 2019 CALGreen. the design requirements specified above shall be noted and/or reflected on all site plans submitted to the Division of Start Architect.

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

No Impact. Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan. A consistency analysis with these plans is presented below.

CARB Scoping Plan

On December 24, 2017, CARB adopted the Final 2017 Climate Change Scoping Plan Update (Scoping Plan) to address the 2030 interim target to achieve a 40 percent reduction below 1990 levels by 2030, established by SB 32 (CARB 2017b). The CARB Scoping Plan is applicable to state agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to

develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Since adoption of the 2008 Scoping Plan, which was adopted to achieve the GHG reduction goals of Assembly Bill 32 (AB 32), state agencies have adopted programs identified in the plan, and the legislature has passed additional legislation to achieve the GHG reduction targets. Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard, California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the Corporate Average Fuel Economy standards, and other early action measures as necessary to ensure the state is on target to achieve the GHG emissions reduction goals of AB 32 and SB 32. Also, new buildings are required to comply with the latest applicable Building Energy Efficiency Standards and CALGreen. While measures in the Scoping Plan apply to state agencies and not the proposed project, the project's GHG emissions would be reduced by statewide compliance with measures that have been adopted since AB 32 and SB 32 were adopted. Therefore, the proposed project would not obstruct implementation of the CARB Scoping Plan, 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, § 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, § 25517, and in the California Code of Regulations, Title 22, § 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, Humboldt County Division of Environmental Health, and Humboldt Bay Fire. Title 40 of the Code of Federal Regulations, part 263, establish standards which 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 to occur. 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 set forth by the Humboldt County 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, Humboldt County Division of Environmental Health,

and Humboldt Bay Fire. 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 to occur.

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. Winship Middle School, located immediately south of the project site, and Cutten Elementary School, located is the only school located 0.2 miles west, are the only schools 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 Humboldt 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 SWRCB Geotracker and the DTSC 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 the California Redwood Coast-Humboldt County Airport, approximately 14 miles to the north. 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. The Standardized Emergency Management System (SEMS), California Code of Regulations, Title 19, Division 2, Section 2443, requires compliance with the SEMS to "be documented in the areas of planning, training, exercise, and performance." The Humboldt County Emergency Operations Plan (EOP) was approved by the Board of Supervisors in March 2015. The purpose of the OEP is to provide the basis for a coordinated response before, during and after a disaster incident affecting Humboldt County, Under the OEP, during a local level emergency or disaster, the Director of Emergency Services is responsible for organizing and directing the preparedness efforts of the County's emergency operations with the Deputy Director of Emergency Services and Humboldt County's mutual aid partners (Humboldt County 2015).

The proposed project would not interfere with the implementation of the OEP and any of the daily operations of the County's Emergency Operation Center, Humboldt Bay Fire (HBF), or Humboldt County Sheriff's Office. All construction activities would be required to be performed per the County's and HBF's standards and regulations. For example, the proposed project would be required to provide the necessary on and offsite 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 County's development review and permitting process and would be required to incorporate all applicable design and safety standards and regulations, as set forth by Humboldt Bay Fire and in the Fire Safe Regulations (Fire Code) of the County's Code of Ordinance, to ensure that they do not interfere with the provision of local emergency services (e.g., 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 Humboldt County'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 substantiated in Section 3.20, *Wildfire*, the project site is located in a moderate FHSZ within the SRA (CAL FIRE 2007). Development of the project would comply with all Humboldt County 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 fire hazard severity zone set forth 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, which sets forth requirements generally parallel to 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 Impact.

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 State Water Resources Control Board ("SWRCB") administers the NPDES permitting program and is responsible for developing NPDES permitting requirements.

Humboldt County Municipal Code Section 337-13 requires development to comply with a Municipal Separate Storm Sewer System (MS4) Permit from the North Coast 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 set forth 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 7, *Construction Best Management Practices*.

Table 7 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 7, 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 assuring that requirements for waste discharges potentially affecting stormwater from project operations are met.

These requirements are set forth in Chapter 7 (Stormwater Quality Management and Discharge Control) of the County's 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 (SUSMP). The project applicant is required to prepare a stormwater mitigation plan that includes those 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 set forth in the municipal NPDES permit. SUSMP 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 County 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. Onsite 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 DSA until the County 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 Eureka Plain Groundwater Basin. The Eureka Plain Groundwater Basin was determined to be a low priority basin and therefore Humboldt Bay Municipal Water District (HBMWD) is not required to produce a Groundwater Management Plan. The Eureka Plain Groundwater Basin is bounded by the Little Salmon Fault to the south, Humboldt Bay and Arcata Bay to the west and northwest, and by Wildcat series deposits to the east. The Wildcat series is a group of five formations ranging in age from Miocene to Pleistocene consisting of sandstone, marine siltstone, and claystone. The northeast basin boundary, shared with the Mad River Basin, is the northwest trending Freshwater Fault. It is unclear if the basin is hydrologically contiguous with the Mad River Basin. Humboldt Bay separates the primary basin deposits from dune sand deposits to the west. The faulted southern and northern basin boundaries may extend to the near surface and form hydrologic barriers in portions of dune sand deposits. Annual precipitation in the basin ranges from 39- to 47-inches, increasing to the southeast. The Eureka Plain Groundwater Basin has not been identified as being over-drafted based upon extraction rates, cone of depression, recharge rate, and water surface elevation. The basin has not been identified as likely to become overdrafted if present management conditions continue.

HCSD purchases water from the Humboldt Bay Municipal Water District (HBMWD) and the City of Eureka. HCSD also uses groundwater extracted from three HCSD owned groundwater wells (400-feet deep). These wells are all located near the base of Humboldt Hill in the Eureka Plain Groundwater Basin, are artesian in nature, and produce excellent quality water. Groundwater pumping rights are not required as the aquifer is not adjudicated. Based on groundwater depth measurements taken since 1988 (time of well installation) there has been no appreciable change in water depth. Water depths in the wells are consistent and are not influenced by climatic variation. Based on this information, the water produced from the HCSD groundwater wells is very reliable and not susceptible to drought conditions.

The water purchased from the City of Eureka is water that the City of Eureka acquired from HBMWD. HCSD is under contract with HBMWD with a maximum daily limit of 2.9 million gallons per day (1,059 million gallons per year). Water originating from HBMWD comes from wells located in the bed of the Mad River. HBMWD currently has water rights to divert 75 million gallons per day from the Mad River. The HBMWD also owns and operates the R.W. Matthews Dam impounding water in Ruth Lake. HBMWD manages releases from the dam to ensure sufficient supplies downstream throughout the year.

Based on the analysis provided in the UWMP, there are no legal, environmental, or water quality factors that result in inconsistency of supply for the 20-year period studied. Moreover, water supply from surface water, reservoir storage, and groundwater is expected to exceed the total demand by 26,710 to 61,855 acre-feet per year from 2020 to 2035 in a normal year and in a single dry year (HCSD 2021).

Based on past construction activities onsite, 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 Soils, for further discussion of erosion. Surface water drainage would be controlled by building regulations, with the water directed toward existing streets, flood control channels, storm drains, and catch basins. The proposed drainage for the site would not channel runoff on 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 proposed permeable asphalt parking lot would reduce impacts from on- or offsite flooding. Therefore, this impact is less than significant.

ii) 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 Humboldt County Municipal Code Section 337-13, which requires development to comply with a MS4 Permit from the North Coast Regional Water Quality Control Board. Drainage from the project site would flow via surface flow into the existing storm drains on Cypress Avenue south of the 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.

iii) Impede or redirect flood flows?

Less Than Significant Impact. The project site is designated by the Federal Emergency Management Agency (FEMA) as being within Zone X, indicating minimal risk of flooding (FEMA 2011). Moreover, the project site is not within a 100- or 500-year flood zone (FEMA 2011). The proposed project would result in a total of .16 acres of new impervious surfaces, or approximately 5 percent of the total project site. Although the proposed project would increase impervious surfaces, the project site is not located

within an area of flood risk, and onsite 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 not within a groundwater management plan area; therefore, the proposed improvements would not conflict or obstruct implementation of a groundwater management plan. The proposed project would comply with water quality requirements set forth in the Statewide General Construction Permit, the NPDES, and the Humboldt County Municipal Code Chapter 7 (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 parking lot and vacant land. Minor off-site improvements may include utility hookups and new crosswalks; these improvements would occur within the public right-of-way and would not physically divide the community. 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 within the Community of Cutten and the prevailing adopted planning and regulatory documents that govern development and use of the project site are the Humboldt County General Plan and Zoning Code (Title 3 of the Humboldt County Municipal Code). The Humboldt County General Plan land use designations of the project site is Public Facility (PF). The project site is zoned Residential One-Family (R-1) (Humboldt County 2017). The proposed public special education school is permitted under the PF land use designation and R-1 zoning district via County approval and issuance of a site plan review. 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 located on or in the immediate vicinity of the project site. Additionally, mining on the project site would be incompatible with the surrounding uses, which consists mostly of residential uses and forestland. Mining is also not a permitted use under the site's General Plan Land Use and zoning designation 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 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 federal, state, and city 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 contained in Appendix B.

Environmental Setting

Existing Conditions

The project site is in a predominantly rural residential area adjacent to the Ryan Creek Community Forest to the east with the nearest freeway, State Route 101 (SR-101), approximately 2.75 miles to the west. Existing traffic noise is relatively low as the project is located on a dead-end road in a rural residential area. Noise sources from nearby residential uses (e.g., property maintenance and vehicular noise) and Winship Middle School to the south (e.g., outdoor student activities, student pick up and drop off, maintenance) also contribute to the total noise environment intermittently in the project vicinity. Considering the project site's rural location and distance from any major roadway, airport, or other significant noise generating land uses, the project site would well outside any 60 dBA CNEL 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 to the west and southwest (along Cypress Avenue and Cedar Street), the Redwood Fields Park to the north, and Winship Middle School to the south.

Applicable Standards

State

Title 5, Section 14040(q) California Department of Education

Under Title 5, the California Department of Education (CDE) regulations require the school district to consider noise in the site selection process. As recommended by CDE guidance, if a school district is considering a potential school site near a freeway or other source of noise, it should hire an acoustical engineer to determine the level of sound that the site is exposed to and to assist in designing the school should that site be chosen.

California Building Code

The State of California's noise insulation standards for non-residential uses are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 11, California Green Building Standards Code (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 when located within 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 $L_{eq(1hr)}$.

Humboldt County

The proposed project is in an unincorporated area of Humboldt County, and therefore, applicable noise standards from the County code and County General Plan are discussed.

General Plan

The County General Plan Noise Element's identifies ways to manage noise levels and minimize excessive noise exposure to its residences. Standard N-S7, of the General Plan Noise Element establishes exterior daytime and nighttime noise standards at residential land uses which apply to the nearest receptors in the vicinity of the project area. These standards are summarized in Table 8 below.

3. Environmental Analysis

Table 8 Short-Term Exterior Noise Standards (Lmax)

Affected Land Use (Receiving Noise)	Day (maximum) 6:00 a.m. to 10:00 p.m. dBA	Night (maximum) 10:00 p.m. to 6:00 a.m. dBA
RM, R-1, R-2, R-3, R-4, RS, , NR	65	60

Source: Humboldt County General Plan, 2009
Note:
RM: Residential Medium
R-1: Residential One Family
R-2: Residential Two Family
R-3: Residential Multiple-Family
R-4: Apartment Professional
RS: Residential Suburban
NR: Natural Resources

Construction

Standard N-S7 exempts heavy equipment and power tools during construction permitted structures when conforming to the terms of the approved permit.

Federal Transit Administration

Adopted Construction Noise Standards

Humboldt County does not have a quantified threshold for temporary construction noise. Therefore, to determine impact significance, the Federal Transit Administration's (FTA) criterion of 80 dBA Leq for daytime residential uses is used in this analysis (FTA 2018).

Adopted Vibration Standards

Humboldt County does not have specific limits or thresholds for vibration. Therefore, for the purposes of this analysis, the FTA's threshold of 0.2 inches/second (in/sec) peak particle velocity (PPV) will be used to assess vibration impacts at non-engineered structures (e.g., wood-frame residential) (FTA 2018).

Would the project result in:

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

Less Than Significant Impact. 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 twelve months, with a tentative start date of June of 2024. 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.

Construction worker and vendor trips would total a maximum of approximately 46 daily trips during overlapping building construction, paving, architectural coating, and finish and landscaping phases. The project would generate up to 21 daily haul truck trips, however, hauling would occur over a 3-day period. These trips would be temporary and any noise increase would cease with completion of construction activity. Additionally, trips would occur during the daytime hours and not in the nighttime sensitive hours. Therefore, noise impacts from temporary worker, vendor, and haul truck trips would be less than significant.

Construction Equipment

Noise generated by onsite 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.

On-site Construction Noise

Average noise levels from project-related construction activities are calculated by modeling the three loudest pieces of equipment per activity phase. Equipment for grading and site preparation is modeled at spatially averaged distances (i.e., from the acoustical center of the general construction site to the property line of the nearest receptors) because the area around the center of construction activities best represents the potential average construction-related noise levels at the various sensitive receptors for mobile equipment. Similarly, construction noise from paving activities is modeled from the center of proposed parking areas. Construction equipment for building construction and architectural coating is modeled from the edge of the proposed building to the nearest sensitive receptors. Lastly utility trenching and landscaping finishing typically occurs

along the edge of projects. Therefore, it is assumed that it could occur within 50 feet of the edge of the proposed project site.

The project's expected construction equipment mix was categorized by construction activity using the FHWA Roadway Construction Noise Model (RCNM). The associated, aggregate sound levels—grouped by construction activity—are summarized in Table 9. RCNM modeling input and output worksheets are included in Appendix B.

As shown in Table 9, on-site construction-related noise levels would not exceed the 80 dBA L_{eq} threshold at the nearest sensitive receptors. Therefore, construction-equipment noise impacts would be considered less than significant, and no mitigation measures are necessary.

Table 9 Project-Related Construction Noise, dBA Leq

Construction Activity Phase	RCNM Reference Noise Level	Nearest Off-site Receptors		
		(Redwood Fields) Park to the North	(Winship Middle School) to the South	Residences to the West
Distance in feet	*50*	*790*	*345*	*240*
Site Preparation	85	61	68	71
Rough Grading	85	61	68	71
Distance in feet	*50*	*175*	*290*	*140*
Building Construction	83	60	67	74
Architectural Coating	74	51	58	65
Distance in feet	50	730	260	100
Paving	85	62	71	79
Distance in feet	50	710	280	110
Utility Trenching	77	54	62	70
Finish and Landscaping	77	54	62	70
Maximum dBA L_{eq}		**62**	**71**	**79**
Exceeds 80 dBA L_{eq} Threshold?		**No**	**No**	**No**

Notes: Calculations performed with the FHWA RCNM software are included in Appendix B.

Operational Noise

Traffic Noise

As stated in the Project Description, the current student population is approximately 80 students. The proposed project would result in a student enrollment of up to 130 students. To estimate the increase in traffic noise, the ITE Manual was used to estimate existing trips and future trips based on student populations. The proposed project serves mostly elementary students and the ITE code for elementary schools was higher than high school. Therefore, this ITE code was used to calculate the traffic noise increase by comparing future student trips over existing trips. ITE rate estimates that 80 students would generate 182 daily trips (existing) and 130 students would generate 295 trips (future). Therefore, the project would result in a net increase of 113 trips.

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 noise sensitive areas. Most people can detect changes in sound levels of approximately 3 dBA exterior environment under normal and quiet conditions. A change less than 3 dBA is detectable under quiet, controlled conditions. Changes of less than 1 dBA are usually indiscernible. An increase of 113 trips would result in a 2.1 dBA increase. This would be less than a 3 dBA increase and would not be considered a substantial noise increase above existing conditions. Therefore, traffic noise impacts would be considered less than significant, and no mitigation measures are necessary.

Mechanical Equipment Noise

HVAC systems would be installed on the roof of the proposed new building. The nearest sensitive receptor property line to the proposed new school building is approximately 115 feet to the west. Typical HVAC equipment generates noise levels ranging up to 72 dBA at distance of 3 feet. At a distance of 115 feet, noise levels would attenuate to 40 dBA and would, therefore, not exceed the City's exterior daytime and nighttime noise standard of 65 and 60 dBA, respectively. Therefore, impacts would be less than significant, and no mitigation measures are necessary.

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

Less Than Significant Impact. Following is a discussion of the project's temporary and permanent 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 (e.g., rail, outdoor industrial uses). 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 non-engineered 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 (residences) is measured from the edge of the area of work/construction site to the nearest building façade. Vibration-induced architectural damage is assessed in terms of peak velocity (PPV). As shown in Table 10, the project would generate vibration levels of up to 0.074 in/sec PPV at the nearest receptors and would not exceed the 0.20 in/sec PPV standard. Therefore, vibration impacts would be less than significant, and no mitigation measures are necessary.

Table 10 Vibration Damage Levels for Typical Construction Equipment

Equipment	PPV (in/sec)			
	FTA Reference at 25 feet	Residences to the northwest at 729 feet	(Winship Middle School) to the south at 200 feet	Residences to the west at 50 feet
Vibratory Roller	0.21	0.001	0.009	0.074
Large Bulldozer	0.089	0.001	0.004	0.031
Caisson Drilling	0.089	0.001	0.004	0.031
Loaded Trucks	0.079	0.000	0.003	0.027
Jackhammer	0.035	0.000	0.002	0.012
Small Bulldozer	0.003	0.000	<0.001	0.001

Source: FTA 2018.

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 Murray Field Airport Northern Air, approximately 2.7 miles to the northeast. 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 public special education school campus. The proposed project is intended to serve the existing and anticipated future student population and would not result in the creation of housing or infrastructure that would induce unplanned population growth in the area. No increase in enrollment is anticipated. 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 in Figure 3, the project site consists of vacant land and an existing school parking lot. 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 HBF. HBF consists of five fire stations in the city (i.e., Fire Stations 1 through 5). The nearest fire station to the project site is Station 5 at 3455 Harris Street, approximately 1 mile to the southwest. 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 5 could provide, HBF would direct resources to the site from other city stations nearby and, if needed, would request assistance from other nearby fire departments. Therefore, impacts would be less than significant, and no mitigation measures are necessary.

b) Police protection?

Less Than Significant Impact. Law enforcement services in the area are provided by the Humboldt County Sheriff's Office. The Humboldt County Sheriff's Office is headquartered at 826 4th Street, approximately 2.75 miles to the southeast. 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 student population in the school 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 Humboldt County Sheriff's Office could provide, the Humboldt County Sheriff's Office would request assistance from other nearby police departments, such as the Eureka 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 designed to serve the existing and future student population at Glen Paul School. 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

f) 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. Cutten is located approximately 2.5 miles south-southeast of Downtown Eureka. A majority of nearby parks and recreational facilities are within the City of Eureka. Within the City limits, the City of Eureka owns and manages seven neighborhood parks and six community park facilities with a combined acreage of approximately 121.5 acres. The McKay Community Park southeast of Eureka, which is owned and managed by Humboldt County, consists of 1,000 acres of forestland. According to Humboldt County Municipal Code Section 314-110, the County uses a level of service standard to calculate park improvement impact fees—3 acres per 1,000 residents—the same ratio specified in the Quimby Act for park land acquisition (Humboldt County 2022a). 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.

g) 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 offsite 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

This section summarizes the results of a traffic/transportation analysis prepared by Garland and Associates, LLC, for the proposed project. The existing school campus is located at the east end of Cypress Avenue north of Winship Middle School in the City of Eureka. Access to the school site is provided by a driveway on the north side of Cypress Avenue that is located 475 feet east of Cedar Street.

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 school's vehicular, pedestrian, or bicycle access and on-site circulation system. The existing driveway on the north side of Cypress Avenue would continue to provide access to the school site 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 school site from the Cypress Avenue driveway and have the option of either continuing straight to the north to the school's parking lots on the west side of the campus or turning right to the school's parking lots on the south and east sides of the campus, including the pedestrian drop-off/pick-up loop located adjacent to the south side of the existing multi-use building. While this access/circulation pattern would not be changed, the layout of the parking spaces in the lot on the south side of the two new buildings would be changed from 90-degree spaces along the north side of the lot to parallel spaces on both sides of the lot. The student drop-off/pick-up loop adjacent to the multi-use building would remain unchanged. While the project would result in a decrease of nine parking spaces at the school, the total number of parking spaces could still adequately accommodate the parking demands.

There would be no changes to pedestrian and bicycle access/circulation patterns as they would enter the school site via the Cypress Avenue driveway and proceed to their destinations through the parking lots. The existing sidewalks along Cypress Avenue and the other streets in the area would continue to be used by pedestrians and bike racks would continue to be provided on the school campus. The number of students attending the school is anticipated to increase from an existing level of 80 students to an expected peak level of 130 students. This would result in an increase in the volumes of traffic that would be generated by the school, 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 non-motorized 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.

3. Environmental Analysis

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 sole 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" (Public Resources Code Section 21099(b)(1)). Pursuant to SB 743, the California Natural Resources Agency adopted revisions to the CEQA Guidelines on December 28, 2018, to implement SB 743. CEQA Guidelines Section 15064.3 describes how transportation impacts are to be analyzed after SB 743. Under the 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 the Public Resources Code Section 21099, subdivision (b)(2), "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment" under CEQA, except for roadway capacity projects.

As stated in the "Technical Advisory on Evaluating Transportation Impacts in CEQA" (California Office of Planning and Research, December 2018) and the "Vehicle Miles Traveled – Focused Transportation Impact Study Guide" (Caltrans, May 20, 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. While the proposed project could result in an increase of up to 50 students at this school site, the traffic associated with these students would be traveling on the area's roadway network regardless of the status of this project. The demand is generated by the number of eligible and age-appropriate students in the area and is not generated by the size of the school's buildings. So, the only increase in traffic that should be considered for the VMT analysis would be the traffic generated by additional staff and faculty at the school. It is anticipated that the new buildings would result in an increase of ten or fewer employees at the school, which would generate a maximum of 20 to 25 vehicle trips per day. As this is well 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 school site for vehicles, bicyclists, and pedestrians would continue to occur via the existing driveway on the north side of Cyprus Avenue. The streets, intersections, driveways, and on-site circulation

system are designed to accommodate the anticipated levels of vehicular and pedestrian activity and have historically been accommodating school-related traffic on a daily basis. They would continue to be compatible with the design and operation of a school.

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

d) Result in inadequate emergency access?

No Impact. The existing access and circulation features at the school, 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 school. Emergency vehicles could easily access the new buildings and all other areas of the school 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. 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 Public Resources Code 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 on the project site, excavation will be halted, mitigation measure CUL-1 shall be implemented as necessary and NAHC will be contacted. As the property has been previously disturbed, it is not anticipated that unknown tribal cultural resources are present on-site. Impacts would be less than significant.

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

3. Environmental Analysis

Less Than Significant Impact. As of July 1, 2015, California Public Resources Code 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 Public Resources Code Section 21080.1(d), a lead agency is required to provide formal notification of intended development projects to Native American tribes that have requested to be on the lead agency's list for receiving such notification. The formal notification is required to include a brief description of the Proposed Project and its location, lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation for tribal cultural resources. The following tribes are on HCOE's notification list pursuant to AB 52:

- Bear River Band of the Rohnerville Rancheria
- Big Lagoon Rancheria
- Blue Lake Rancheria
- Cher-Ae Heights Indian Community of the Trinidad Rancheria
- Hoopa Valley Tribe
- Karuk Tribe
- Round Valley Reservation/ Covelo Indian Community
- Shasta Indian Nation
- Shasta Nation
- Tsnungwe Council
- Wiyot Tribe
- Yurok Tribe

As of the time of the publication of this Mitigated Negative Declaration, HCOE received one response via mail from the Cher-Ae Heights Indian Community of the Trinidad Rancheria and two responses via email from Blue Lake Rancheria and the Wiyot Tribe. Blue Lake Rancheria indicated that the Tribe has reviewed records and were unaware of any cultural resources on or immediately adjacent to the school. The Tribe further recommended that inadvertent archaeological discovery protocol be implemented as a project condition for any ground disturbing activities and that the three Wiyot area tribes be notified and consulted if any cultural resources are found. The Wiyot Tribe concurred with Blue Lake Rancheria's recommendation. As discussed previously, Mitigation Measure CUL-1 satisfies the recommendations of these tribes. The Cher-Ae Heights Indian Community of the Trinidad Rancheria indicated that the project area is outside the geographical area of concern for the Trinidad Rancheria and therefore the Tribe has no interest in the project and no information to provide. As such, no consultations have been initiated.

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 on the project site, excavation will be halted, Mitigation Measure CUL-1 shall be implemented as necessary and the NAHC will be contacted. As the property has been previously disturbed, it is not anticipated that unknown tribal cultural resources are present on-site. Impacts would be less than significant.

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

Humboldt Community Services District (HCSD) would provide potable water to the project site. HCSD has two main water sources: water from the Mad River, which is purchased from HBMWD directly and from the City of Eureka indirectly; and groundwater, which is pumped from HCSD owned wells (HCSD 2014). The project site has existing connection to the water distribution system operated by HCSD. Water use at the project site includes the irrigation system, fire protection, and drinking water, restroom, and housekeeping appliances. The proposed project would serve current and future students living in the region. It would not generate an increase in student population or water treatment demands in the HCSD service area. Students would already be attending schools in the local area and using water that requires treatment; therefore, the overall demand for water treatment would not increase. Additionally, HCSD estimates that it will have sufficient water supplies to meet proposed growth for normal, single-dry, and multiple-dry years (HCSD 2021). 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 HCSD. 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 Section 3.10.c.iii, above. As substantiated in this 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 via existing infrastructure in the immediate area of the project site. Electric power uses under the proposed project will 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 related to electric power supply. 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.

3. Environmental Analysis

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. Natural gas uses under the proposed project will include kitchen stoves, 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 and Suddenlink, 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., HCSD will have adequate water supplies to meet water demands in its service area through 2040 during normal, dry, and multiple dry years (HCSD 2021). Additionally, the proposed project's landscaping would be required to comply with California's Model Water Efficient Landscape Ordinance (MWELO), 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 waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. As substantiated above in Section 3.19.a, the proposed project would not increase overall school district enrollment and would not expand total treatment demands within 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 Humboldt Waste Management Authority Solid Waste Transfer Station in Eureka. Large recyclable materials (scrap metal, wood, and concrete) and hazardous materials (washers, dryers, televisions, tires, etc.) are pulled from the waste stream at the Eureka facility, and the remaining solid waste is shipped to the Dry Creek Landfill in Medford, Oregon and the Anderson Landfill in Anderson, California. In 2018, 100 percent of solid waste generated in the city was disposed at the Anderson Landfill (CalRecycle 2019a). The Anderson Landfill is permitted to received 1,850 tons of solid waste per day and has a remaining capacity of 10,409,132 tons[7] (CalRecycle 2019b). Project operation is estimated to generate about 0.007 pounds per square feet per day, resulting in 59.2 pounds per day or 0.03 tons per day (Cal Recycle 2019c). The proposed project would result in a negligible amount of 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 federal and state 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 activities.
- **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 adopted in the Scoping Plan by the California Air Resources Board.
- **AB 1327 (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 govern solid waste disposal. Therefore, impact would be less than significant and no mitigation measures are necessary.

[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 CalRecyle's 2016 Volume-to-Weight Conversion Factors

3.20 WILDFIRE

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

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

Less Than Significant Impact. 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 within State Responsibility Areas (SRA). Mapping of the areas, referred to as Very High Fire Hazard Severity Zones (Very High FHSZ), is based on data and models of potential fuels over a 30- to 50-year time horizon and their associated expected fire behavior and expected burn probabilities, which quantifies 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 California Building Code Chapter 7A requiring new buildings in FHSZ to use ignition-resistant construction methods and materials.

The community of Cutten is located within a designated SRA moderate and high FHSZ. The project site is located in a moderate FHSZ within the SRA (CAL FIRE 2007). However, lands surrounding the project site are within a designated SRA high FHSZ.

Development on the project site would be subject to compliance with the 2019 California Building Code (CBC). The Community of Cutten is covered under the Humboldt County Emergency Operations Plan and Humboldt County Operational Area 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 Fire Code 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 the Community of Cutten, conformance with the CBC and Fire Code, 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 in the southern portion of the site. The city does not have high-speed prevailing winds, and average wind speeds are approximately 8.8 miles per hour during the windier part of the year, from April to July (Weather Spark 2022).

Development of the site with the proposed improvements would reduce the amount of exposed vegetation that could be used as fuel on the site. 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. Moreover, the Community of Cutten is under the Humboldt County Operational Area Hazard Mitigation Plan, which provides guidance to effectively respond to and mitigate emergencies, including wildfires. While the project site is within a moderate FHSZ, conformance with the CBC and Fire Code, 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 onsite utility infrastructure. The utilities would be installed to meet service requirements. While the project site is within a moderate 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 Section 3.7 and 3.10 respectively, above, 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 may 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 onsite and, therefore, the project site does not have the potential to eliminate important examples of California history or prehistory. As 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 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.

4. References

Airnav, LLC. 2022. Airport Information. http://www.airnav.com/airports.

Bay Area Air Quality Management District (BAAQMD). 2017, May. California Environmental Quality Act Air Quality Guidelines. https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

CAPCOA (California Air Pollution Control Officers Association). 2009, July. Health Risk Assessments for Proposed Land Use Projects. http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf

———. 2022. California Emissions Estimator Model (CalEEMod). Version 2022.1.0. Prepared by: ICF in collaboration with Sacramento Metropolitan Air Quality Management District.

CARB (California Air Resources Board). 2005, April. Air Quality and Land Use Handbook: A Community Health Perspective. https://www.gsweventcenter.com/Website_Refs/handbook.pdf.

———. 2017a, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/shortlived.htm.

———. 2017b, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

———. 2022, Area Designations Maps/State and National. Accessed September 22, 2022. https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

CDFW (California Department of Fish and Wildlife). 2019, April. California Natural Community Conservation Plans. https://wildlife.ca.gov/conservation/planning/nccp/plans

CAL FIRE (California Department of Forestry and Fire Protection). 2007, November 6. Humboldt County – Fire Hazard Severity Zones in SRA. https://osfm.fire.ca.gov/media/6677/fhszs_map12.pdf

CalRecycle (California Department of Resources Recycling and Recovery). 2019a. Jurisdiction Disposal and Alternative Daily Cover (ADC) Tons by Facility. https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Destination/DisposalByFacility.

———. 2019b. SWIS Facility Detail Anderson Landfill, Inc. (45-AA-0020). https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1049?siteID=3457

4. References

———. 2019c. Estimated Solid Waste Generation Rates. https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates

Caltrans (California Department of Transportation). 2022, May 19 (accessed). California Highway System. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=026e830c914c495797c969a3e5668538.

CASQA (California Stormwater Quality Association). 2015. A Strategic Approach to Planning for and Assessing the Effectiveness of Stormwater Programs.

CEC (California Energy Commission). 2018a. News Release: Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. http://www.energy.ca.gov/releases/2018_releases/2018-05-09_building_standards_adopted_nr.html.

———. 2018b. 2019 Building Energy and Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf.

CGEU (California Gas and Electric Utilities). 2022. 2022 California Gas Report. https://www.socalgas.com/sites/default/files/Joint_Utility_Biennial_Comprehensive_California_Gas_Report_2022.pdf.

CNRA (California Natural Resources Agency). 2018, November. Final Statement of Reasons for Regulatory Action http://resources.ca.gov/ceqa/docs/2018_CEQA_Final_Statement_of%20Reasons_111218.pdf

DLRP (California Department of Conservation - Division of Land Resource Protection). 2016a. Accessed May 20, 2022. https://maps.conservation.ca.gov/dlrp/ciff/

DTSC (California Department of Toxic Substances Control). 2022. Envirostor – Viewer.

Federal Highway Administration. 2006, August. Construction Noise Handbook.

FTA (Federal Transit Administration). May 2018, September. Transit Noise and Vibration Impact Assessment.

FEMA (Federal Emergency Management Agency). 2011. Flood Map Number 06007C0400E. https://msc.fema.gov/portal/search?AddressQuery

HCSD (Humboldt Community Services District). 2014, October. Municipal Service Review for the Humboldt Community Services District Sphere of Influence. http://humboldtlafco.org/wp-content/uploads/Humboldt_CSD_Final-MSR.pdf

———. 2021, June. Urban Water Management Plan 2020. https://humboldtcsd.org/sites/default/files/2020_UWMP.pdf

4. References

Humboldt County. 2010, September. Humboldt County, California – Williamson Act Subvention Lands. https://humboldtgov.org/DocumentCenter/View/484/Williamson-Act-Contract-Ranches---High-Resolution-PDF?bidId=

———. 2017. Humboldt County General Plan. https://humboldtgov.org/DocumentCenter/View/61984/Humboldt-County-General-Plan-complete-document-PDF

———. 2022a. Humboldt County Municipal Code. https://humboldt.county.codes/

———. 2022b. Humboldt County Web GIS. Accessed May 20, 2022. https://webgis.co.humboldt.ca.us/HCEGIS2.0/

Institute of Transportation Engineering. September 2021. Trip Generation Manual.

NCUAQMD (North Coast Unified Air Quality Management District). 1995, May 11. Particulate Matter (PM10) Attainment Plan Draft Report. https://ncuaqmd.specialdistrict.org/files/6f1ad639b/NCUAQMD+Attainment+Plan+5-95.pdf

———. 2015. Regulation 1 – General Provisions, Permits, & Prohibition. https://www.ncuaqmd.org/files/79b32c00a/Regulation+I+-+General+Provisions.pdf

NORESCO. 2018, June 29. 2019 Update to the California Energy Efficiency Standards for Residential and Non-Residential Buildings.

NPS (U.S. Department of the Interior, National Park Service). 2020. National Register of Historic Places. https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466.

OEHHA (Office of Environmental Health Hazard Assessment). 2015, February. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf.

OHP (California State Parks, Office of Historic Preservation). 2020. California Historical Landmarks by County. https://ohp.parks.ca.gov/ListedResources/?view=county&criteria=12.

OPR (Governor's Office of Planning and Research). 2008, June. CEQA and Climate Change: Addressing Climate Change through CEQA Review. Technical Advisory. http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf.

PG&E (Pacific Gas & Electric). 2022. Renewable Energy. https://www.pgecorp.com/corp_responsibility/reports/2018/bu07_renewable_energy.html#:~:text=PG%26E%20reached%20California's%202020%20renewable,Senate%20Bill%20(SB)%20100.

SMAQMD Sacramento Metropolitan Air Quality Management District). 2018. CEQA Guide: Chapter 6 – Greenhouse Gas Emissions. https://www.airquality.org/LandUseTransportation/Documents/Ch6GHG2-26-2021.pdf

4. References

SWRCB (State Water Resource Control Board). 2022. Geotracker – Viewer.

UC Davis & NRCS (University of California, Davis & Natural Resource Conservation Service). 2021. Soil Properties Interactive Map. https://casoilresource.lawr.ucdavis.edu/soil-properties/

USGS (United States Geological Survey). 2021, August. USGS Interactive Fault Map. U.S. Quaternary Faults. Accessed May 27, 2022. https://usgs.maps.arcgis.com/apps/webappviewer/

Weather Spark. 2022. Average Weather in Eureka. https://weatherspark.com/y/314/Average-Weather-in-Eureka-California-United-States-Year-Round

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Appendices

Appendix A Air Quality and Greenhouse Gas Background and Modeling Data

Appendices

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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 promulgated at the local, state, and federal levels. The project site is in the North Coast Air Basin (NCAB) and is subject to the rules and regulations imposed by the North Coast Unified Air Quality Management District (NCUAQMD). However, NCUAQMD reports to California Air Resources board (CARB), and all criteria emissions are also governed by the California and national Ambient Air Quality Standards (AAQS). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

AMBIENT AIR QUALITY STANDARDS

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

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

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

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

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	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 NCAB. 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 (US EPA 2022a). The NCAB is designated as being in attainment under the California AAQS and attainment under the National AAQS (CARB 2022a).

Volatile Organic Compounds (VOC) or **Reactive Organic Compounds (ROC)** 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. There are no ambient air quality standards established for ROCs. However, because they contribute to the formation of ozone (O_3), NCUAQMD has established a significance threshold for this pollutant (NCUAQMD 2015a).

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 (US EPA 2022a). The NCAB is designated as being in attainment under the California AAQS and unclassified/attainment under the National AAQS (CARB 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 (US EPA 2022a). The NCAB is designated as attainment under the California and National AAQS (CARB 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 (US 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 (US 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 (US 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] (US EPA 2022a). The NCAB is designated unclassified for $PM_{2.5}$ under California and National AAQS and is designated nonattainment area for PM_{10} under the California AAQS in Humboldt and Mendocino Counties (CARB 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

[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.

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 (US EPA 2022a). The NCAB is designated attainment under the California AAQS (1-hour and 8-hour) and unclassified/attainment under the National AAQS (8-hour) (CARB 2022a).

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (USEPA 2022a). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted stricter lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards. The NCAB is designated as attainment under the California AAQS and unclassified/attainment under the National AAQS (CARB 2022a). Because emissions of lead are found only in projects that are permitted by NCUAQMD, lead is not a pollutant 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 NCUAQMD is the agency responsible for improving air quality in the NCAB and ensuring that the National and California AAQS are attained and maintained. Due to the NCAB's climate and location within mountains and valleys, pollutants from sources such as vehicles, burning of vegetation, and stationary industrial sources are easily trapped and the NCAB is currently designated as nonattainment for PM_{10}. In an effort to achieve the state air quality standard, the NCUAQMD prepared the Particulate Matter PM_{10} Attainment Plan (NCUAQMD 1995). The Attainment Plan was prepared to assess the nature and causes of exceedances of the PM_{10} standards, determine reduction targets, and identify cost-effective control measures which can be implemented to reduce PM_{10} levels to meet the California AAQS. However, it must be noted that this document was not a requirement in order for the NCUAQMD to come into attainment for the state standard and was prepared solely to inform NCUAQMD.

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 NCAB. The discussion below identifies the natural factors in the NCAB 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.

North Coast Air Basin

The project site lies in the NCAB, which includes all of Del Norte, Humboldt, Trinity and Mendocino counties in addition to a portion of Sonoma County.[4] The NCAB is mountainous with fairly level terrain along the coast, with connecting broad valleys and low hills. It is bordered on the west by the Pacific Ocean and extends from the Oregon Border south approximately 140 miles to the Mendocino County line and varies between 30 to 100 miles in width inland (NCUAQMD 1995).

Temperature and Precipitation

The weather is dependent on the distance from the coast and the elevation. Inland areas within the NCAB may experience hot, dry summers and cold, snowy winters (NCUAQMD 1995). The annual average temperature varies little throughout the NCAB, ranging from the low to middle 50s and 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station nearest to the project site with temperature data is the Eureka WFO Woodley Island Monitoring Station (ID 042910). The average low is reported at 41.3°F in January, and the average high is 63.0°F in September (WRCC 2022).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Some portions of the NCAB have some of the highest rainfall totals found in the United States, occasionally over 60 inches, which occurs during the winter rainy season (NCUAQMD 1995). Almost all rain falls from October through May. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages 39.45 inches per year in the vicinity of the area (WRCC 2022).

Wind

Dominant winds also exhibit a seasonal pattern within the NCAB, particularly in coastal areas. During the summer north to northwesterly winds, frequently strong, are common, while in the winter storms from the south Pacific increase the percentage of days winds are from southerly quadrants. In the river canyons that empty into the Pacific, a diurnal pattern is often present in wind direction. In the morning hours, cool air from higher elevations flows down the valleys while later in the day as the lower elevation air heats up this pattern is reversed, and the air flow heads up the canyon, which can frequently be very strong. Offshore and onshore flows are also common along the coast and are associated with pressure systems in the area. Onshore flows frequently bring foggy cool weather to the coast, while offshore flows often blow fog away from the coast and bring sunny, warm days (NCUAQMD 1995).

[4] While the NCAB covers all of Del Norte, Humboldt, Trinity and Mendocino Counties in addition to a portion of Sonoma County, only Del Norte, Humboldt, and Trinity Counties are within the jurisdiction of the NCUAQMD

Inversions

Temperature inversions are a common occurrence in the NCUAQMD. Vertical air movement is important in spreading pollutants through a thicker layer of air. Horizontal movement is important in spreading pollutants over a wider area. Upward dispersion of pollutants is hindered wherever the atmosphere is stable; that is, where warm air overlies cooler air below. This situation is known as a temperature inversion (NCUAQMD 1995). The NCAB experiences two distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the subsidence inversion and the radiation inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area.

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 NCAB is shown in Table 2, *Attainment Status of Criteria Pollutants in the North Coast Air Basin*.

Table 2 Attainment Status of Criteria Pollutants in the North Coast Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Attainment	No Federal Standard
Ozone – 8-hour	Attainment	Unclassified/Attainment
PM_{10}	Nonattainment (Humboldt and Mendocino Counties)	Unclassified
$PM_{2.5}$	Attainment	Unclassified/Attainment
CO	Unclassified (Del Norte and Trinity Counties)/ Attainment (Humboldt and Mendocino Counties)	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment

Table 2 Attainment Status of Criteria Pollutants in the North Coast Air Basin

Pollutant	State	Federal
SO_2	Attainment	Unclassified/Attainment
Lead	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

Source: CARB 2022a.

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 NCUAQMD. The air quality monitoring station closest to the proposed project is the Eureka-Jacobs Monitoring Station. Data from this station includes O_3, NO_2, PM_{10}, and $PM_{2.5}$ and is summarized in Table 3, *Ambient Air Quality Monitoring Summary*. The data show that the area regularly exceeds the state and federal one-hour and eight-hour O_3 standards within the last five recorded years. Additionally, the area has regularly exceeded the state PM_{10} standards and federal $PM_{2.5}$ standard.

Table 3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations[1]				
	2017	2018	2019	2020	2021
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	0	0	0	0	0
State & Federal 8-hour ≥ 0.070 ppm (days exceed threshold)	2	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.063	0.045	0.051	0.046	0.050
Max. 8-Hour Conc. (ppm)	0.059	0.041	0.049	0.042	0.044
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)	0.0224	0.0581	0.0279	0.0209	0.0202
Coarse Particulates (PM_{10})					
State 24-Hour > 50 µg/m^3 (days exceed threshold)	4	0	0	4	3
Federal 24-Hour > 150 µg/m^3 (days exceed threshold)	0	0	0	1	0
Max. 24-Hour Conc. (µg/m^3)	114.1	71.0	49.3	171.5	61.9
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m^3 (days exceed threshold)	1	2	0	2	0
Max. 24-Hour Conc. (µg/m^3)	49.0	39.6	18.7	38.8	16.2

Source: CARB 2022c.
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 September 2022.

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 single-family residences along Berner Lane and Cedar Street to the southwest and Winship Middle School to the south.

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 NCUAQMD Rule 110.

Thresholds of Significance

CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. While the NCUAQMD has not formally adopted significance thresholds to guide CEQA significance determinations for land development projects, it recommends use of the Best Available Control Technology (BACT) emission rates for stationary sources as defined in NCUAQMD Rule 110 as significance thresholds (NCUAQMD 2015b and 2021). The analysis of the proposed project's air quality impacts follows the guidance and methodologies found in NCUAQMD Rule 110.

REGIONAL SIGNIFICANCE THRESHOLDS

The NCUAQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the NCAB. Table 4, *NCUAQMD Significance Thresholds*, lists NCUAQMD's regional significance threshold that are applicable for all projects uniformly regardless of size or scope for both construction and operational emissions. There is growing evidence that although ultrafine particulates contribute a very small portion of the overall atmospheric mass concentration, they represent a greater proportion of the health risk from PM. However, the EPA or CARB have not yet adopted AAQS to regulate ultrafine particulates; therefore, NCUAQMD has not developed thresholds for them.

Table 4 NCUAQMD Significance Thresholds

Air Pollutant	Daily (lb/day)	Annual (tons/year)
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	50 lbs/day	40 tons/year
Nitrogen Oxides (NO_X)	50 lbs/day	40 tons/year
Carbon Monoxide (CO)	500 lbs/day	100 tons/year
Sulfur Oxides (SO_X)	80 lbs/day	40 tons/year
Particulates (PM_{10})	80 lbs/day	15 tons/year
Particulates ($PM_{2.5}$)	50 lbs/day	10 tons/year

Source: NCUAQMD 2015b.

If projects exceed the emissions in Table 4, emissions would cumulatively contribute to the nonattainment status and would contribute in 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.

However, for projects that exceed the emissions in Table 4, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited above. The NCUAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the NCAB and at the present time, it has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978* (Friant Ranch).

Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the EPA, the air districts prepare air quality management plans that details regional programs to attain the AAQS. However, if a project within the jurisdiction of NCUAQMD exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until such time the attainment standards are met in the NCAB.

CO HOTSPOTS

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the

atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the NCAB and in the state have steadily declined. The NCAB has been designated attainment under both the national and California AAQS for CO. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017).

Health Risk

Whenever a project would require use of chemical compounds that have been identified in NCUAQMD Rule 300, placed on CARB's air toxics list pursuant to AB 1807, or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the NCUAQMD. The NCUAQMD has not yet adopted guidance for health risk assessments or health risk significance thresholds, but instead recommends use of the California Air Pollution Control Officers Association (CAPCOA) "Health Risk Assessments for Proposed Land Use Projects" guidance document to assess project impacts related to toxic air contaminants (NCUAQMD 2015a). Table 5, *Toxic Air Contaminants Incremental Risk Thresholds*, lists the TAC incremental risk thresholds for operation of a project from the CAPCOA guidance document. 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.

Table 5 Toxic Air Contaminants Incremental Risk Thresholds

Maximum Incremental Cancer Risk	≥ 10 in 1 million
Hazard Index (project increment)	≥ 1.0

Source: CAPCOA 2009.

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-

[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.

depleting gases 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 2022b).

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).

Since the peak level in 2004, California's GHG emission shave generally followed a decreasing trend. In 2016, California statewide GHG emissions dropped below the AB 32 target for year 2020 of 431 $MMTCO_2e$ and have remained below this target since then. In 2019, emissions from routine GHG-emitting activities statewide were almost 13 $MMTCO_2e$ lower than the AB 32 target for year 2020. Per-capita GHG emissions in California have dropped from a 2001 peak of 14.0 $MTCO_2e$ per person to 10.5 $MTCO_2e$ per person in 2019, a 25 percent decrease.

Transportation emissions continued to decline in 2019 statewide as they had done in 2018, with even more substantial reductions due to a significant increase in renewable diesel. Since 2008, California's electricity sector has followed an overall downward trend in emissions. In 2019, solar power generation continued its rapid growth since 2013. Emissions from high-GWP gases comprised 4.9 percent of California's emissions in 2019. This continues the increasing trend as the gases replace ozone-depleting substances being phased out under the 1987 Montreal Protocol. 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, though the state's gross domestic product grew 63 percent during this period (CARB 2021).

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).

REGULATION OF GHG EMISSIONS ON A STATE LEVEL

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in EO S-03-05 and EO B-30-15, EO B-55-18, Assembly Bill 32 (AB 32), Senate Bill 32 (SB 32), 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 $MMTCO_2e$

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.

Draft 2022 Climate Change Scoping Plan

CARB released the Draft 2022 Scoping Plan on May 10, 2022. The Scoping Plan was updated to address the carbon neutrality goals of EO B-55-18. 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. 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 measures in the Scoping Plan would achieve 80 percent below 1990 levels by 2050. Final adoption of the 2022 Scoping Plan is anticipated in late fall 2022 (CARB 2022d).

CARB's 2022 Scoping Plan identifies strategies that would be most impactful at the local level for ensuring substantial process towards the State's carbon neutrality goals (see Table 9, *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).
	Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as permit streamlining, infrastructure siting, consumer education, or preferential parking policies).
VMT Reduction	Reduce or eliminate minimum parking standards in new developments,
	Adopt and implement Complete Streets policies and investments, consistent with general plan circulation element requirements,
	Increase public access to shared clean mobility options (such as planning for and investing in electric shuttles, bike share, car share, transit).
	Implement parking pricing or transportation demand management pricing strategies.
	Amend zoning or development codes to enable mixed-use, walkable, and compact infill development (such as increasing allowable density of the neighborhood).
	Preserve natural and working lands.
Building Decarbonization	Adopt policies and incentive programs to implement energy efficiency retrofits (such as weatherization, lighting upgrades, replacing energy intensive appliances and equipment with more efficient systems, etc.).
	Adopt policies and incentive programs to electrify all appliances and equipment in existing buildings.
	Adopt policies and incentive programs to reduce electrical loads from equipment plugged into outlets (such as purchasing Energy Star equipment for municipal buildings, occupancy sensors, smart power strips, equipment controllers, etc.).
	Facilitate deployment of renewable energy production and distribution and energy storage.

Source: CARB 2022d

For CEQA projects for proposed land use developments, CARB recommends demonstrating that they 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:

- At least 20 percent of the units are affordable to lower-income residents;
- Result in no net loss of existing affordable units;

- Utilize existing infill sites that are surrounded by urban uses, and reuse or redevelop previously developed, underutilized land presently served by existing utilities and essential public services (e.g., transit, streets, water, sewer);
- Include transit-supportive densities (minimum of 20 residential dwelling units/acre), or are in proximity to existing transit (within ½ mile), or satisfy more detailed and stringent criteria specified in the region's Sustainable Communities Strategy (SCS), for "SCS consistency" that would go further to reduce emissions;
- Do not result in the loss or conversion of the State's natural and working lands;
- Use all electric appliances, without any natural gas connections, and would not use propane or other fossil fuels for space heating, water heating, or indoor cooking;
- Provide EV charging infrastructure at least in accordance with the California Green Building Standards Code (CalGreen) Tier 2 standards; and
- Relax parking requirements by:
    - Eliminating parking requirements or including maximum allowable parking ratios.
    - Providing residential parking supply at a ratio of <1 parking space per unit;
    - Unbundling residential parking costs from costs to rent or lease (CARB 2022).

The second approach to project-level alignment with State climate goals is net zero GHG emissions. The third approach to demonstrating project-level alignment with State climate goals is to align with GHG thresholds of significance, which many local air quality management (AQMDs) and air pollution control districts (APCDs) have developed or adopted (CARB 2022d).

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.

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

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.

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.

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]

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

The NCUAQMD has not yet adopted a qualified GHG reduction plan, policy, or regulation and has not yet adopted a quantified GHG significance threshold. Therefore, thresholds and guidance adopted by other nearby air districts are used for the purpose of this analysis. For purposes of this analysis, the GHG emissions significance thresholds used are based on the current operation-phase GHG threshold of significance developed by the Sacramento Metro Air Quality Management District (SMAQMD). The SMAQMD has created a tiered approach in evaluating operation-related GHG emissions impacts. Per its CEQA Guide, a project may be evaluated for consistency with a qualified CAP. If a project is determined to be consistent with the qualified CAP, it is considered to result in a less than significant GHG emissions impact. However, if a project is not consistent with an applicable qualified CAP, or there is no existing applicable qualified CAP, a project may be evaluated against the GHG operational screening levels. The screening levels represent the size of development that would not result in generating operation emissions exceeding 1,100 $MTCO_2e/yr$. If a project does not exceed the screening levels or generate emissions less than or equal to 1,100 $MTCO_2e/yr$ and implements the Tier 1 GHG Best Management Practices (BMP), it is determined to result in a less than significant GHG emissions impact. The Tier 1 BMPs prohibit use of natural gas and require a project to be designed and constructed without natural gas infrastructure (BMP 1) and require a project to meet the current CALGreen Tier 2 electric vehicle ready standards (BMP 2). If a project exceeds 1,100 $MTCO_2e/yr$ with the Tier 1 BMPs, it would be required to incorporate the Tier 2 BMPs, which consists of BMP 3. A project would meet BMP 3 requirements if it reduces its VMT by 15 percent for residential and/or worker compared to the existing average VMT per capita in the county. Additionally, if applicable, the retail component of a project must achieve a no net increase in GHG production.

[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.

BIBLIOGRAPHY

Bay Area Air Quality Management District (BAAQMD). 2017, May. California Environmental Quality Act Air Quality Guidelines. https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en.

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod). Version 2022.1.0. Prepared by: ICF in collaboration with Sacramento Metropolitan Air Quality Management District.

———. 2009, July. Health Risk Assessments for Proposed Land Use Projects. http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf

California Air Resources Board (CARB). 1998, April 22. The Report on Diesel Exhaust. http://www.arb.ca.gov/toxics/dieseltac/de-fnds.htm.

———. 1999. California Air Resources Board (CARB). Final Staff Report: Update to the Toxic Air Contaminant List. https://www.arb.ca.gov/toxics/finalreport.pdf

———. 2010, September. Staff Report Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375. https://ww3.arb.ca.gov/board/res/2010/res10-31.pdf.

———. 2016, October 1. Ambient Air Quality Standards. https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf.

———. 2017a, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. https://ww2.arb.ca.gov/sites/default/files/2018-12/final_slcp_report%20Final%202017.pdf.

———. 2017b, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

———. 2018, February. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf.

———. 2019, July 25. California and major automakers reach groundbreaking framework agreement on clean emission standards. https://ww2.arb.ca.gov/news/california-and-major-automakers-reach-groundbreaking-framework-agreement-clean-emission.

———. 2021, July 28. California Greenhouse Gas 2000-2019 Emissions Trends and Indicators Report. https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf.

———. 2022a, September 20 (accessed). Maps of State and Federal Area Designations. https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

———. 2022b, February 10 (accessed). Common Air Pollutants. https://ww2.arb.ca.gov/resources/common-air-pollutants.

_____. 2022c, February 20 (accessed). Air Pollution Data Monitoring Cards (2016, 2017, 2018, 2019, and 2020). https://www.arb.ca.gov/adam/topfour/topfour1.php

_____. 2022d, April. CARB Draft Scoping Plan: AB32 Source Emissions Initial Modeling Results. https://ww2.arb.ca.gov/sites/default/files/2022-04/SP22-Initial-AQ-Health-Econ-Results-ws-E3.pdf

California Energy Commission (CEC). 2018a. News Release: Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. https://www.energy.ca.gov/news/2018-05/energy-commission-adopts-standards-requiring-solar-systems-new-homes-first.

———.2018b. 2019 Building Energy and Efficiency Standards Frequently Asked Questions. https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf.

———. 2021, May 19. Amendments to the Building Energy Efficiency Standards (2022 Energy Code) Draft Environmental Report. CEC-400-2021-077-D.

Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report: Climate Change 1995. https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_sar_wg_I_full_report.pdf.

———. 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/03/WGI_TAR_full_report.pdf.

———. 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/02/ar4_syr_full_report.pdf.

———. 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf.

National Highway Traffic Safety Administration (NHTSA). 2022, April 1. USDOT Announces New Vehicle Fuel Economy Standards for Model year 2024-2026. https://www.nhtsa.gov/press-releases/usdot-announces-new-vehicle-fuel-economy-standards-model-year-2024-2026.

North Coast Unified Air Quality Management District (NCUAQMD). 1995, May 11. Particulate Matter (PM10) Attainment Plan Draft Report. https://ncuaqmd.specialdistrict.org/files/6f1ad639b/NCUAQMD+Attainment+Plan+5-95.pdf

———. 2015a, July. Regulation 1 – General Provisions, Permits, & Prohibition. https://www.ncuaqmd.org/files/79b32c00a/Regulation+I+-+General+Provisions.pdf

———. 2015b, July. Regulation 1 - Rule 110 – New Source Review (NSR) And Prevention of Significant Deterioration (PSD). https://ncuaqmd.specialdistrict.org/files/397b4b794/Rule+110.pdf

———. 2021. Planning and CEQA. https://www.ncuaqmd.org/planning-ceqa

US Environmental Protection Agency (USEPA). 2009, December. EPA: Greenhouse Gases Threaten Public Health and the Environment. Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity. https://archive.epa.gov/epapages/newsroom_archive/newsreleases/08d11a451131bca585257685005bf252.html.

———. 2022a, October 16 (accessed). Criteria Air Pollutants. https://www.epa.gov/criteria-air-pollutants.

———. 2022b, October 21 (accessed). Overview of Greenhouse Gases. http://www3.epa.gov/climatechange/ghgemissions/gases.html.

Western Regional Climate Center (WRCC). 2022, September 20 (accessed). Period of Record Monthly Climate Summary, 12/01/1886 to 06/09/2016. Eureka WFO Woodley Island, California, Station (ID # 042910). Western US Climate Summaries. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2910.

Emissions Worksheet

Regional Construction Emissions Worksheet:

3.2. Demolition (2024)							
		ROG	NOx	CO	SO_2	PM10 Total	PM2.5Total
Onsite	**Summer**						
	Off-Road Equipment	1.61	15.60	16.00	0.02	0.67	0.62
	Demolition					0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.61**	**15.60**	**16.00**	**0.02**	**0.67**	**0.62**
Offsite							
	Worker	0.07	0.06	0.65	0.00	0.01	0.00
	Vendor	0.01	0.37	0.13	0.01	0.02	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.08**	**0.43**	**0.78**	**0.01**	**0.03**	**0.01**
TOTAL		***1.69***	***16.03***	***16.78***	***0.03***	***0.70***	***0.63***
Onsite	**Winter**						
	Off-Road Equipment	0.03	0.30	0.31	0.01	0.01	0.01
	Demolition					0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.03**	**0.30**	**0.31**	**0.01**	**0.01**	**0.01**
Offsite							
	Worker	0.01	0.01	0.01	0.00	0.01	0.00
	Vendor	0.01	0.01	0.01	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**
TOTAL		***0.04***	***0.32***	***0.33***	***0.01***	***0.02***	***0.02***
Onsite							
	Off-Road	1.61	15.60	16.00	0.02	0.67	0.62
	Demolition	0.00	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.61**	**15.60**	**16.00**	**0.02**	**0.67**	**0.62**
Offsite							
	Worker	0.07	0.06	0.65	0.00	0.01	0.00
	Vendor	0.01	0.37	0.13	0.01	0.02	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.08**	**0.43**	**0.78**	**0.01**	**0.03**	**0.01**
TOTAL		***1.69***	***16.03***	***16.78***	***0.03***	***0.70***	***0.63***

3.4. Demolition Debris Hauling (2024)							
		ROG	NOx	CO	SO_2	PM10 Total	PM2.5Total
Onsite	**Summer**						
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition					1.29	0.20
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**1.29**	**0.20**
Offsite							
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.01	0.62	0.10	0.01	0.04	0.02
	Total	**0.01**	**0.62**	**0.10**	**0.01**	**0.04**	**0.02**
TOTAL		***0.01***	***0.62***	***0.10***	***0.01***	***1.33***	***0.22***
Onsite	**Winter**						
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition					0.02	0.01
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.01**
Offsite							
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.01	0.01	0.01	0.01	0.01	0.01
	Total	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
TOTAL		***0.01***	***0.01***	***0.01***	***0.01***	***0.03***	***0.01***
Onsite							
	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00	1.29	0.20
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**1.29**	**0.20**
Offsite							
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.01	0.62	0.10	0.01	0.04	0.02
	Total	**0.01**	**0.62**	**0.10**	**0.01**	**0.04**	**0.02**
TOTAL		***0.01***	***0.62***	***0.10***	***0.01***	***1.33***	***0.22***

3.6. Site Preparation (2024)							
		ROG	NOx	CO	SO_2	PM10 Total	PM2.5Total
Onsite		**Summer**					
	Off-Road Equipment	1.43	13.70	12.90	0.02	0.65	0.59
	Demolition					2.44	1.17
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.43**	**13.70**	**12.90**	**0.02**	**3.09**	**1.76**
Offsite							
	Worker	0.04	0.04	0.39	0.00	0.01	0.00
	Vendor	0.01	0.30	0.10	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.05**	**0.34**	**0.49**	**0.01**	**0.02**	**0.01**
TOTAL		***1.48***	***14.04***	***13.39***	***0.03***	***3.11***	***1.77***
Onsite		**Winter**					
	Off-Road Equipment	0.01	0.11	0.11	0.01	0.01	0.01
	Demolition					0.02	0.01
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.11**	**0.11**	**0.01**	**0.03**	**0.02**
Offsite							
	Worker	0.01	0.01	0.01	0.00	0.01	0.00
	Vendor	0.01	0.01	0.01	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
TOTAL		***0.02***	***0.12***	***0.12***	***0.01***	***0.04***	***0.02***
Onsite							
	Off-Road	1.43	13.70	12.90	0.02	0.65	0.59
	Demolition	0.00	0.00	0.00	0.00	2.44	1.17
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.43**	**13.70**	**12.90**	**0.02**	**3.09**	**1.76**
Offsite							
	Worker	0.04	0.04	0.39	0.00	0.01	0.00
	Vendor	0.01	0.30	0.10	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.05**	**0.34**	**0.49**	**0.01**	**0.02**	**0.01**
TOTAL		***1.48***	***14.04***	***13.39***	***0.03***	***3.11***	***1.77***

3.8. Site Preparation Soil Haul (2024)							
		ROG	NOx	CO	SO_2	PM10 Total	PM2.5Total
Onsite		**Summer**					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition					0.01	0.01
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.01**
Offsite							
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.10	6.48	0.99	0.06	0.39	0.19
	Total	**0.10**	**6.48**	**0.99**	**0.06**	**0.39**	**0.19**
TOTAL		***0.10***	***6.48***	***0.99***	***0.06***	***0.40***	***0.20***
Onsite		**Winter**					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition					0.01	0.01
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.01**
Offsite							
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.01	0.05	0.01	0.01	0.01	0.01
	Total	**0.01**	**0.05**	**0.01**	**0.01**	**0.01**	**0.01**
TOTAL		***0.01***	***0.05***	***0.01***	***0.01***	***0.01***	***0.01***
Onsite							
	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00	0.01	0.01
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.01**
Offsite							
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.10	6.48	0.99	0.06	0.39	0.19
	Total	**0.10**	**6.48**	**0.99**	**0.06**	**0.39**	**0.19**
TOTAL		***0.10***	***6.48***	***0.99***	***0.06***	***0.40***	***0.20***

3.10. Grading (2024)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	1.65	15.90	15.40	0.02	0.74	0.68
	Demolition					2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.65**	**15.90**	**15.40**	**0.02**	**3.50**	**2.02**
Offsite							
	Worker	0.06	0.05	0.52	0.00	0.01	0.00
	Vendor	0.01	0.37	0.13	0.01	0.02	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.07**	**0.42**	**0.65**	**0.01**	**0.03**	**0.01**
TOTAL		***1.72***	***16.32***	***16.05***	***0.03***	***3.53***	***2.03***
Onsite		**Winter**					
	Off-Road Equipment	0.02	0.22	0.21	0.01	0.01	0.01
	Demolition					0.04	0.02
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.02**	**0.22**	**0.21**	**0.01**	**0.05**	**0.03**
Offsite							
	Worker	0.01	0.01	0.01	0.00	0.01	0.00
	Vendor	0.01	0.01	0.01	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**
TOTAL		***0.03***	***0.24***	***0.23***	***0.01***	***0.06***	***0.04***
Onsite							
	Off-Road	1.65	15.90	15.40	0.02	0.74	0.68
	Demolition	0.00	0.00	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.65**	**15.90**	**15.40**	**0.02**	**3.50**	**2.02**
Offsite							
	Hauling	0.06	0.05	0.52	0.00	0.01	0.00
	Vendor	0.01	0.37	0.13	0.01	0.02	0.01
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.07**	**0.42**	**0.65**	**0.01**	**0.03**	**0.01**
TOTAL		***1.72***	***16.32***	***16.05***	***0.03***	***3.53***	***2.03***

3.12. Building Construction (2024)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	1.13	9.44	10.10	0.02	0.37	0.34
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.13**	**9.44**	**10.10**	**0.02**	**0.37**	**0.34**
Offsite							
	Worker	0.11	0.09	0.97	0.00	0.01	0.00
	Vendor	0.01	0.27	0.09	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.12**	**0.36**	**1.06**	**0.01**	**0.02**	**0.01**
TOTAL		***1.25***	***9.80***	***11.16***	***0.03***	***0.39***	***0.35***
Onsite		**Winter**					
	Off-Road Equipment	1.13	9.44	10.10	0.02	0.37	0.34
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.13**	**9.44**	**10.10**	**0.02**	**0.37**	**0.34**
Offsite							
	Worker	0.11	0.11	1.07	0.00	0.01	0.00
	Vendor	0.01	0.28	0.10	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.12**	**0.39**	**1.17**	**0.01**	**0.02**	**0.01**
TOTAL		***1.25***	***9.83***	***11.27***	***0.03***	***0.39***	***0.35***
Onsite							
	Off-Road Equipment	1.13	9.44	10.10	0.02	0.37	0.34
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.13**	**9.44**	**10.10**	**0.02**	**0.37**	**0.34**
Offsite							
	Worker	0.11	0.11	1.07	0.00	0.01	0.00
	Vendor	0.01	0.28	0.10	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.12**	**0.39**	**1.17**	**0.01**	**0.02**	**0.01**
TOTAL		***1.25***	***9.83***	***11.27***	***0.03***	***0.39***	***0.35***

3.14. Building Construction (2025)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	1.07	8.95	10.00	0.02	0.33	0.30
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.07**	**8.95**	**10.00**	**0.02**	**0.33**	**0.30**
Offsite							
	Worker	0.11	0.09	0.91	0.00	0.01	0.00
	Vendor	0.01	0.26	0.09	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.12**	**0.35**	**1.00**	**0.01**	**0.02**	**0.01**
TOTAL		***1.19***	***9.30***	***11.00***	***0.03***	***0.35***	***0.31***
Onsite		**Winter**					
	Off-Road Equipment	1.07	8.95	10.00	0.02	0.33	0.30
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.07**	**8.95**	**10.00**	**0.02**	**0.33**	**0.30**
Offsite							
	Worker	0.11	0.10	1.00	0.00	0.01	0.00
	Vendor	0.01	0.27	0.09	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.12**	**0.37**	**1.09**	**0.01**	**0.02**	**0.01**
TOTAL		***1.19***	***9.32***	***11.09***	***0.03***	***0.35***	***0.31***
Onsite							
	Off-Road Equipment	1.07	8.95	10.00	0.02	0.33	0.30
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.07**	**8.95**	**10.00**	**0.02**	**0.33**	**0.30**
Offsite							
	Worker	0.11	0.10	1.00	0.00	0.01	0.00
	Vendor	0.01	0.27	0.09	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.12**	**0.37**	**1.09**	**0.01**	**0.02**	**0.01**
TOTAL		***1.19***	***9.32***	***11.09***	***0.03***	***0.35***	***0.31***

3.16. Paving (2025)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	0.49	4.63	6.50	0.01	0.20	0.19
	Paving	0.02					
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.51**	**4.63**	**6.50**	**0.01**	**0.20**	**0.19**
Offsite							
	Worker	0.07	0.06	0.61	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.07**	**0.06**	**0.61**	**0.00**	**0.01**	**0.00**
TOTAL		***0.58***	***4.69***	***7.11***	***0.01***	***0.21***	***0.19***
Onsite		**Winter**					
	Off-Road Equipment	0.02	0.16	0.23	0.01	0.01	0.01
	Paving	0.01					
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.03**	**0.16**	**0.23**	**0.01**	**0.01**	**0.01**
Offsite							
	Worker	0.01	0.01	0.01	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**
TOTAL		***0.03***	***0.17***	***0.24***	***0.01***	***0.02***	***0.01***
Onsite							
	Off-Road Equipment	0.49	4.63	6.50	0.01	0.20	0.19
	Paving	0.02	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.51**	**4.63**	**6.50**	**0.01**	**0.20**	**0.19**
Offsite							
	Worker	0.07	0.06	0.61	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.07**	**0.06**	**0.61**	**0.00**	**0.01**	**0.00**
TOTAL		***0.58***	***4.69***	***7.11***	***0.01***	***0.21***	***0.19***

3.18. Architectural Coating (2025)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	0.13	0.88	1.14	0.01	0.03	0.03
	Architectural Coatings	31.40					
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**31.53**	**0.88**	**1.14**	**0.01**	**0.03**	**0.03**
Offsite							
	Worker	0.02	0.02	0.18	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.01**	**0.00**
TOTAL		***31.55***	***0.90***	***1.32***	***0.01***	***0.04***	***0.03***
Onsite		**Winter**					
	Off-Road Equipment	0.01	0.03	0.04	0.01	0.01	0.01
	Architectural Coatings	1.12					
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.13**	**0.03**	**0.04**	**0.01**	**0.01**	**0.01**
Offsite							
	Worker	0.01	0.01	0.01	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**
TOTAL		***1.13***	***0.04***	***0.05***	***0.01***	***0.01***	***0.01***
Onsite							
	Off-Road Equipment	0.13	0.88	1.14	0.01	0.03	0.03
	Architectural Coatings	31.40	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**31.53**	**0.88**	**1.14**	**0.01**	**0.03**	**0.03**
Offsite							
	Worker	0.02	0.02	0.18	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.01**	**0.00**
TOTAL		***31.55***	***0.90***	***1.32***	***0.01***	***0.04***	***0.03***

3.20. Utilities Trenching (2024)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	0.10	0.84	1.01	0.01	0.03	0.03
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.10**	**0.84**	**1.01**	**0.01**	**0.03**	**0.03**
Offsite							
	Worker	0.01	0.01	0.13	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.13**	**0.00**	**0.01**	**0.00**
TOTAL		***0.11***	***0.85***	***1.14***	***0.01***	***0.04***	***0.03***
Onsite		**Winter**					
	Off-Road Equipment	0.01	0.02	0.02	0.01	0.01	0.01
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**
Offsite							
	Worker	0.01	0.01	0.01	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**
TOTAL		***0.01***	***0.03***	***0.03***	***0.01***	***0.01***	***0.01***
Onsite							
	Off-Road Equipment	0.10	0.84	1.01	0.01	0.03	0.03
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.10**	**0.84**	**1.01**	**0.01**	**0.03**	**0.03**
Offsite							
	Worker	0.01	0.01	0.13	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.13**	**0.00**	**0.01**	**0.00**
TOTAL		***0.11***	***0.85***	***1.14***	***0.01***	***0.04***	***0.03***

3.22. Finishing/Landscaping (2025)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	0.10	0.83	1.02	0.01	0.03	0.02
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.10**	**0.83**	**1.02**	**0.01**	**0.03**	**0.02**
Offsite							
	Worker	0.01	0.01	0.12	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.12**	**0.00**	**0.01**	**0.00**
TOTAL		***0.11***	***0.84***	***1.14***	***0.01***	***0.04***	***0.02***
Onsite		**Winter**					
	Off-Road Equipment	0.01	0.02	0.02	0.01	0.01	0.01
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**
Offsite							
	Worker	0.01	0.01	0.01	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**
TOTAL		***0.01***	***0.03***	***0.03***	***0.01***	***0.01***	***0.01***
Onsite							
	Off-Road Equipment	0.10	0.83	1.02	0.01	0.03	0.02
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.10**	**0.83**	**1.02**	**0.01**	**0.03**	**0.02**
Offsite							
	Worker	0.01	0.01	0.12	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.12**	**0.00**	**0.01**	**0.00**
TOTAL		***0.11***	***0.84***	***1.14***	***0.01***	***0.04***	***0.02***

DAILY EMISSIONS (lb/day)

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Building Demolition and Debris Haul, Site Preparation and Soil Haul	***3***	***37***	***31***	***0***	***6***	***3***
Building Demolition and Debris Haul, Site Preparation and Soil Haul, and Grading	***5***	***53***	***47***	***0***	***9***	***5***
Building Demolition and Debris Haul, and Grading	***3***	***33***	***33***	***0***	***6***	***3***
Building Demolition and Debris Haul, Grading, and Utility Trenching	***4***	***34***	***34***	***0***	***6***	***3***
Utility Trenching	***0***	***1***	***1***	***0***	***0***	***0***
Utility Trenching and Building Construction 2024	***1***	***11***	***12***	***0***	***0***	***0***
Building Construction 2024	***1***	***10***	***11***	***0***	***0***	***0***
Building Construction 2025	***1***	***9***	***11***	***0***	***0***	***0***
Building Construction 2025, Paving, and Architectural Coating	***33***	***15***	***20***	***0***	***1***	***1***
Building Construction 2025, Paving, Architectural Coating, and Finishing/Landscaping	***33***	***16***	***21***	***0***	***1***	***1***
MAX DAILY	**33**	**53**	**47**	**0**	**9**	**5**
Regional Thresholds	**50**	**50**	**500**	**80**	**80**	**50**
Exceeds Thresholds?	No	Yes	No	No	No	No

	ANNUAL EMISSIONS (tons/year)					
	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Year 2024	*0.10*	*0.82*	*0.91*	*0.01*	*0.06*	*0.04*
Year 2025	*0.27*	*0.55*	*0.67*	*0.01*	*0.03*	*0.02*
ANNUAL EMISSIONS	**0.27**	**0.82**	**0.91**	**0.01**	**0.06**	**0.04**
Regional Thresholds	**40**	**40**	**100**	**40**	**15**	**10**
Exceeds Thresholds?	No	No	No	No	No	No

Mitigated Regional Construction Emissions Worksheet:

3.2. Demolition (2024)

		ROG	NOx	CO	SO_2	PM10 Total	PM2.5Total
Onsite		**Summer**					
	Off-Road Equipment	0.33	8.81	14.60	0.02	0.10	0.09
	Demolition					0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.33**	**8.81**	**14.60**	**0.02**	**0.10**	**0.09**
Offsite							
	Worker	0.07	0.06	0.65	0.00	0.01	0.00
	Vendor	0.01	0.37	0.13	< 0.005	0.02	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.08**	**0.43**	**0.78**	**0.00**	**0.03**	**0.01**
TOTAL		***0.41***	***9.24***	***15.38***	***0.02***	***0.13***	***0.10***
Onsite		**Winter**					
	Off-Road Equipment	0.01	0.17	0.28	< 0.005	< 0.005	< 0.005
	Demolition					0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.17**	**0.28**	**0.00**	**0.00**	**0.00**
Offsite							
	Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	0.00
	Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**
TOTAL		***0.01***	***0.18***	***0.29***	***0.00***	***0.00***	***0.00***
Onsite							
	Off-Road	0.33	8.81	14.60	0.02	0.10	0.09
	Demolition	0.00	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.33**	**8.81**	**14.60**	**0.02**	**0.10**	**0.09**
Offsite							
	Worker	0.07	0.06	0.65	0.00	0.01	0.00
	Vendor	0.01	0.37	0.13	0.00	0.02	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.08**	**0.43**	**0.78**	**0.00**	**0.03**	**0.01**
TOTAL		***0.41***	***9.24***	***15.38***	***0.02***	***0.13***	***0.10***

3.4. Demolition Debris Hauling (2024)

		ROG	NOx	CO	SO_2	PM10 Total	PM2.5Total
Onsite		**Summer**					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition					1.29	0.20
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**1.29**	**0.20**
Offsite							
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.01	0.62	0.10	0.01	0.04	0.02
	Total	**0.01**	**0.62**	**0.10**	**0.01**	**0.04**	**0.02**
TOTAL		***0.01***	***0.62***	***0.10***	***0.01***	***1.33***	***0.22***
Onsite		**Winter**					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition					0.02	< 0.005
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**
Offsite							
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005
	Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**
TOTAL		***0.00***	***0.01***	***0.00***	***0.00***	***0.02***	***0.00***
Onsite							
	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00	1.29	0.20
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**1.29**	**0.20**
Offsite							
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.01	0.62	0.10	0.01	0.04	0.02
	Total	**0.01**	**0.62**	**0.10**	**0.01**	**0.04**	**0.02**
TOTAL		***0.01***	***0.62***	***0.10***	***0.01***	***1.33***	***0.22***

3.6. Site Preparation (2024)

		ROG	NOx	CO	SO_2	PM10 Total	PM2.5Total
Onsite		**Summer**					
	Off-Road Equipment	0.27	6.40	11.90	0.02	0.04	0.04
	Demolition					2.44	1.17
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.27**	**6.40**	**11.90**	**0.02**	**2.48**	**1.21**
Offsite							
	Worker	0.04	0.04	0.39	0.00	< 0.005	0.00
	Vendor	0.01	0.30	0.10	< 0.005	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.05**	**0.34**	**0.49**	**0.00**	**0.01**	**0.01**
TOTAL		***0.32***	***6.74***	***12.39***	***0.02***	***2.49***	***1.22***
Onsite		**Winter**					
	Off-Road Equipment	< 0.005	0.05	0.10	< 0.005	< 0.005	< 0.005
	Demolition					0.02	0.01
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.05**	**0.10**	**0.00**	**0.02**	**0.01**
Offsite							
	Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	0.00
	Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
TOTAL		***0.00***	***0.05***	***0.10***	***0.00***	***0.02***	***0.01***
Onsite							
	Off-Road	0.27	6.40	11.90	0.02	0.04	0.04
	Demolition	0.00	0.00	0.00	0.00	2.44	1.17
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.27**	**6.40**	**11.90**	**0.02**	**2.48**	**1.21**
Offsite							
	Worker	0.04	0.04	0.39	0.00	0.00	0.00
	Vendor	0.01	0.30	0.10	0.00	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.05**	**0.34**	**0.49**	**0.00**	**0.01**	**0.01**
TOTAL		***0.32***	***6.74***	***12.39***	***0.02***	***2.49***	***1.22***

3.8. Site Preparation Soil Haul (2024)

		ROG	NOx	CO	SO_2	PM10 Total	PM2.5Total
Onsite		**Summer**					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition					0.01	< 0.005
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**
Offsite							
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.10	6.48	0.99	0.06	0.39	0.19
	Total	**0.10**	**6.48**	**0.99**	**0.06**	**0.39**	**0.19**
TOTAL		***0.10***	***6.48***	***0.99***	***0.06***	***0.40***	***0.19***
Onsite		**Winter**					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition					< 0.005	< 0.005
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite							
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	< 0.005	0.05	0.01	< 0.005	< 0.005	< 0.005
	Total	**0.00**	**0.05**	**0.01**	**0.00**	**0.00**	**0.00**
TOTAL		***0.00***	***0.05***	***0.01***	***0.00***	***0.00***	***0.00***
Onsite							
	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00	0.01	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**
Offsite							
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.10	6.48	0.99	0.06	0.39	0.19
	Total	**0.10**	**6.48**	**0.99**	**0.06**	**0.39**	**0.19**
TOTAL		***0.10***	***6.48***	***0.99***	***0.06***	***0.40***	***0.19***

3.10. Grading (2024)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	0.32	7.70	14.20	0.02	0.05	0.05
	Demolition					2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.32**	**7.70**	**14.20**	**0.02**	**2.81**	**1.39**
Offsite							
	Worker	0.06	0.05	0.52	0.00	< 0.005	0.00
	Vendor	0.01	0.37	0.13	< 0.005	0.02	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.07**	**0.42**	**0.65**	**0.00**	**0.02**	**0.01**
TOTAL		***0.39***	***8.12***	***14.85***	***0.02***	***2.83***	***1.40***
Onsite		**Winter**					
	Off-Road Equipment	< 0.005	0.11	0.20	< 0.005	< 0.005	< 0.005
	Demolition					0.04	0.02
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.11**	**0.20**	**0.00**	**0.04**	**0.02**
Offsite							
	Worker	0.01	0.01	0.01	0.00	0.01	0.00
	Vendor	0.01	0.01	0.01	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**
TOTAL		***0.01***	***0.13***	***0.22***	***0.01***	***0.05***	***0.03***
Onsite							
	Off-Road	< 0.005	< 0.005	0.01	0.00	< 0.005	0.00
	Demolition	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.32**	**7.70**	**14.20**	**0.02**	**2.81**	**1.39**
Offsite							
	Hauling	0.06	0.05	0.52	0.00	0.01	0.00
	Vendor	0.01	0.37	0.13	0.01	0.02	0.01
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.07**	**0.42**	**0.65**	**0.01**	**0.02**	**0.01**
TOTAL		***0.39***	***8.12***	***14.85***	***0.03***	***2.83***	***1.40***

3.12. Building Construction (2024)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	1.13	9.44	10.10	0.02	0.37	0.34
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.13**	**9.44**	**10.10**	**0.02**	**0.37**	**0.34**
Offsite							
	Worker	0.11	0.09	0.97	0.00	0.01	0.00
	Vendor	0.01	0.27	0.09	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.12**	**0.36**	**1.06**	**0.01**	**0.02**	**0.01**
TOTAL		***1.25***	***9.80***	***11.16***	***0.03***	***0.39***	***0.35***
Onsite		**Winter**					
	Off-Road Equipment	1.13	9.44	10.10	0.02	0.37	0.34
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.13**	**9.44**	**10.10**	**0.02**	**0.37**	**0.34**
Offsite							
	Worker	0.11	0.11	1.07	0.00	0.01	0.00
	Vendor	0.01	0.28	0.10	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.12**	**0.39**	**1.17**	**0.01**	**0.02**	**0.01**
TOTAL		***1.25***	***9.83***	***11.27***	***0.03***	***0.39***	***0.35***
Onsite							
	Off-Road Equipment	1.13	9.44	10.10	0.02	0.37	0.34
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.13**	**9.44**	**10.10**	**0.02**	**0.37**	**0.34**
Offsite							
	Worker	0.11	0.11	1.07	0.00	0.01	0.00
	Vendor	0.01	0.28	0.10	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.12**	**0.39**	**1.17**	**0.01**	**0.02**	**0.01**
TOTAL		***1.25***	***9.83***	***11.27***	***0.03***	***0.39***	***0.35***

3.14. Building Construction (2025)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	1.07	8.95	10.00	0.02	0.33	0.30
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.07**	**8.95**	**10.00**	**0.02**	**0.33**	**0.30**
Offsite							
	Worker	0.11	0.09	0.91	0.00	0.01	0.00
	Vendor	0.01	0.26	0.09	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.12**	**0.35**	**1.00**	**0.01**	**0.02**	**0.01**
TOTAL		***1.19***	***9.30***	***11.00***	***0.03***	***0.35***	***0.31***
Onsite		**Winter**					
	Off-Road Equipment	1.07	8.95	10.00	0.02	0.33	0.30
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.07**	**8.95**	**10.00**	**0.02**	**0.33**	**0.30**
Offsite							
	Worker	0.11	0.10	1.00	0.00	0.01	0.00
	Vendor	0.01	0.27	0.09	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.12**	**0.37**	**1.09**	**0.01**	**0.02**	**0.01**
TOTAL		***1.19***	***9.32***	***11.09***	***0.03***	***0.35***	***0.31***
Onsite							
	Off-Road Equipment	1.07	8.95	10.00	0.02	0.33	0.30
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.07**	**8.95**	**10.00**	**0.02**	**0.33**	**0.30**
Offsite							
	Worker	0.11	0.10	1.00	0.00	0.01	0.00
	Vendor	0.01	0.27	0.09	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.12**	**0.37**	**1.09**	**0.01**	**0.02**	**0.01**
TOTAL		***1.19***	***9.32***	***11.09***	***0.03***	***0.35***	***0.31***

3.16. Paving (2025)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	0.49	4.63	6.50	0.01	0.20	0.19
	Paving	0.02					
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.51**	**4.63**	**6.50**	**0.01**	**0.20**	**0.19**
Offsite							
	Worker	0.07	0.06	0.61	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.07**	**0.06**	**0.61**	**0.00**	**0.01**	**0.00**
TOTAL		***0.58***	***4.69***	***7.11***	***0.01***	***0.21***	***0.19***
Onsite		**Winter**					
	Off-Road Equipment	0.02	0.16	0.23	0.01	0.01	0.01
	Paving	0.01					
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.03**	**0.16**	**0.23**	**0.01**	**0.01**	**0.01**
Offsite							
	Worker	0.01	0.01	0.01	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**
TOTAL		***0.03***	***0.17***	***0.24***	***0.01***	***0.02***	***0.01***
Onsite							
	Off-Road Equipment	0.49	4.63	6.50	0.01	0.20	0.19
	Paving	0.02	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.51**	**4.63**	**6.50**	**0.01**	**0.20**	**0.19**
Offsite							
	Worker	0.07	0.06	0.61	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.07**	**0.06**	**0.61**	**0.00**	**0.01**	**0.00**
TOTAL		***0.58***	***4.69***	***7.11***	***0.01***	***0.21***	***0.19***

3.18. Architectural Coating (2025)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	0.13	0.88	1.14	0.01	0.03	0.03
	Architectural Coatings	31.40					
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**31.53**	**0.88**	**1.14**	**0.01**	**0.03**	**0.03**
Offsite							
	Worker	0.02	0.02	0.18	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.01**	**0.00**
TOTAL		***31.55***	***0.90***	***1.32***	***0.01***	***0.04***	***0.03***
Onsite		**Winter**					
	Off-Road Equipment	0.01	0.03	0.04	0.01	0.01	0.01
	Architectural Coatings	1.12					
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.13**	**0.03**	**0.04**	**0.01**	**0.01**	**0.01**
Offsite							
	Worker	0.01	0.01	0.01	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**
TOTAL		***1.13***	***0.04***	***0.05***	***0.01***	***0.01***	***0.01***
Onsite							
	Off-Road Equipment	0.13	0.88	1.14	0.01	0.03	0.03
	Architectural Coatings	31.40	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**31.53**	**0.88**	**1.14**	**0.01**	**0.03**	**0.03**
Offsite							
	Worker	0.02	0.02	0.18	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.01**	**0.00**
TOTAL		***31.55***	***0.90***	***1.32***	***0.01***	***0.04***	***0.03***

3.20. Utilities Trenching (2024)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	0.10	0.84	1.01	0.01	0.03	0.03
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.10**	**0.84**	**1.01**	**0.01**	**0.03**	**0.03**
Offsite							
	Worker	0.01	0.01	0.13	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.13**	**0.00**	**0.01**	**0.00**
TOTAL		***0.11***	***0.85***	***1.14***	***0.01***	***0.04***	***0.03***
Onsite		**Winter**					
	Off-Road Equipment	0.01	0.02	0.02	0.01	0.01	0.01
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**
Offsite							
	Worker	0.01	0.01	0.01	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**
TOTAL		***0.01***	***0.03***	***0.03***	***0.01***	***0.01***	***0.01***
Onsite							
	Off-Road Equipment	0.10	0.84	1.01	0.01	0.03	0.03
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.10**	**0.84**	**1.01**	**0.01**	**0.03**	**0.03**
Offsite							
	Worker	0.01	0.01	0.13	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.13**	**0.00**	**0.01**	**0.00**
TOTAL		***0.11***	***0.85***	***1.14***	***0.01***	***0.04***	***0.03***

3.22. Finishing/Landscaping (2025)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	0.10	0.83	1.02	0.01	0.03	0.02
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.10**	**0.83**	**1.02**	**0.01**	**0.03**	**0.02**
Offsite							
	Worker	0.01	0.01	0.12	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.12**	**0.00**	**0.01**	**0.00**
TOTAL		***0.11***	***0.84***	***1.14***	***0.01***	***0.04***	***0.02***
Onsite		**Winter**					
	Off-Road Equipment	0.01	0.02	0.02	0.01	0.01	0.01
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**
Offsite							
	Worker	0.01	0.01	0.01	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**
TOTAL		***0.01***	***0.03***	***0.03***	***0.01***	***0.01***	***0.01***
Onsite							
	Off-Road Equipment	0.10	0.83	1.02	0.01	0.03	0.02
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.10**	**0.83**	**1.02**	**0.01**	**0.03**	**0.02**
Offsite							
	Worker	0.01	0.01	0.12	0.00	0.01	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.01**	**0.12**	**0.00**	**0.01**	**0.00**
TOTAL		***0.11***	***0.84***	***1.14***	***0.01***	***0.04***	***0.02***

	DAILY EMISSIONS (lb/day)					
	ROG	**NOx**	**CO**	**SO2**	**PM10 Total**	**PM2.5 Total**
Building Demolition and Debris Haul, Site Preparation and Soil Haul	***1***	***23***	***29***	***0***	***4***	***2***
Building Demolition and Debris Haul, Site Preparation and Soil Haul, and Grading	***1***	***31***	***44***	***0***	***7***	***3***
Building Demolition and Debris Haul, and Grading	***1***	***18***	***30***	***0***	***4***	***2***
Building Demolition and Debris Haul, Grading, and Utility Trenching	***1***	***19***	***31***	***0***	***4***	***2***
Utility Trenching	***0***	***1***	***1***	***0***	***0***	***0***
Utility Trenching and Building Construction 2024	***1***	***11***	***12***	***0***	***0***	***0***
Building Construction 2024	***1***	***10***	***11***	***0***	***0***	***0***
Building Construction 2025	***1***	***9***	***11***	***0***	***0***	***0***
Building Construction 2025, Paving, and Architectural Coating	***33***	***15***	***20***	***0***	***1***	***1***
Building Construction 2025, Paving, Architectural Coating, and Finishing/Landscaping	***33***	***16***	***21***	***0***	***1***	***1***
MAX DAILY	**33**	**31**	**44**	**0**	**7**	**3**
Regional Thresholds	**50**	**50**	**500**	**80**	**80**	**50**
Exceeds Thresholds?	No	No	No	No	No	No

	ANNUAL EMISSIONS (tons/year)					
	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Year 2024	*< 0.005*	*0.08*	*0.12*	*< 0.005*	*0.02*	*0.01*
Year 2025	*0.27*	*0.55*	*0.67*	*< 0.005*	*0.03*	*0.02*
ANNUAL EMISSIONS	**0.27**	**0.55**	**0.67**	**0.00**	**0.03**	**0.02**
Regional Thresholds	**40**	**40**	**100**	**40**	**15**	**10**
Exceeds Thresholds?	No	No	No	No	No	No

Regional Operation Emissions Worksheet

[1] CalEEMod, Version 2022.1

Proposed Project

DAILY EMISSIONS (lb/day)

Summer

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	1	0	3	0	0	0
Area	1	0	2	0	0	0
Energy	0	0	0	0	0	0
Total	**1**	**1**	**5**	**0**	**0**	**0**

Winter

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	1	1	3	0	0	0
Area	0					
Energy	0	0	0	0	0	0
Total	**1**	**1**	**3**	**0**	**0**	**0**

Max Daily

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	1	1	3	0	0	0
Area	1	0	2	0	0	0
Energy	0	0	0	0	0	0
Total	**1**	**1**	**5**	**0**	**0**	**0**
Regional Thresholds (lb/day)	**50**	**50**	**500**	**80**	**80**	**50**
Exceeds Thresholds?	No	No	No	No	No	No

ANNUAL EMISSIONS (tons/year)

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.07	0.06	0.38	0.01	0.02	0.01
Area	0.12	0.01	0.17	0.01	0.01	0.01
Energy	0.01	0.04	0.03	0.01	0.01	0.01
Total Annual Emissions	**0.20**	**0.11**	**0.58**	**0.02**	**0.03**	**0.02**
Regional Thresholds	**40**	**40**	**100**	**40**	**15**	**10**
Exceeds Thresholds?	No	No	No	No	No	No

GHG Emissions Inventory

Proposed Project Buildout

Construction[1]

	$MTCO_2e$
2024	162
2025	114
Total Construction	**276**
30-Year Amortization[2]	**9**

Notes

[1] CalEEMod, Version 2022.1

[2] Total construction emissions are amortized over 30 years per SMAQMD methodology. International Energy Agency, 2008. Energy Efficiency Requirements in Building Codes, Energy Efficiency Policies for New Buildings. https://www.iea.org/publications/freepublications/publication/Building_Codes.pdf, accessed November 21, 2019.

Operations[1]

	$MTCO_2e$/Year[2] Operations	%
Mobile	53	43%
Area	1	1%
Energy	61	50%
Water	0	0%
Solid Waste	7	6%
Refrigeration	0.01	0%
Total	**122**	100%
Sacramento Metropolitan AQMD Screening Threshold[3]	**1,100**	
Exceed Threshold?	**No**	

Notes

[1] CalEEMod, Version 2022.1

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

[3] In absense of quantified GHG thresholds from NCUAQMD, the SMAQMD GHG thresholds have been used for the purposes of this analysis.

Assumptions Worksheet

CalEEMod Inputs- Glen Paul School Modernization Project, Construction

Name:	Glen Paul School Modernization Project, Construction
Project Number:	HCOE-01
Project Location:	2501 Cypress Ave, Eureka, CA 95503
County/Air Basin:	Humboldt County
Climate Zone:	1
Land Use Setting:	Suburban
Operational Year:	2025
Utility Company:	PGE
Air Basin:	North Coast Air Basin
Air District:	North Coast Unified Air Quality Management District
SRA:	

Project Site Acreage	9.79
Disturbed Site Acreage	1.02

Project Components	SQFT	Tons	Notes
Demolition			
Multi-Use Building Demolition	9,000	414	

Project Components	Number of Stories	SQFT	Building Footprint	Acres
Construction				
Classroom Building	1	4,228	4,228	0.10
Administration Facility Building	1	4,228	4,228	0.10
Multi-Use Building	1	9,000	9,000	0.21
TOTAL BUILDING AREA		**17,456**	**17,456**	**0.40**
Parking Lot		4,544		0.10
Play Fields		4,425		0.10
Landscaping		6,296		0.14
Hardscape		9,740		0.22
Remaining Area		1,970		0.05
			TOTAL ACREAGE	**1.02**

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet
Educational	High School	17.456	1000 sqft	0.4007346189	17,456
Parking	Parking Lot	4.544	1000 sqft	0.10	4,544
Parking*	Other Non-asphalt Surfaces (Landscape)	6.296	1000 sqft	0.14453627181	6,296
Parking*	Other Non-asphalt Surfaces (Hardscape)	9.740	1000 sqft	0.22	9,740
Parking	Other Non-asphalt Surfaces (Playfields and Remaining Area)	6.395	1000 sqft	0.15	6,395
				1.02	

Demolition[1]

Component	Amount to be Demolished (Tons)	Haul Truck Capacity (tons)	Haul Distance (miles)	Total Trip Ends	Duration (days)	Trip Ends per Day
Total Building Demo	414	20	20	42	7	6
Total	414			42		

Soil Haul[1]

Construction Activities	Volume (CY)	Haul Truck Capacity (cy)	Haul Distance (miles)	Total Trip Ends	Duration (days)	Trip Ends per Day
Grading (Export)	1500	16	20	188	3	63

[1] Haul Distance based provided by the Applicant

Architectural Coating

	Percent Painted
Interior Painted:	100%
Exterior Painted:	100%

CalEEMod

Interior Paint VOC content:	250	grams per liter
Exterior Paing VOC content:	250	grams per liter

Structures	Land Use Square Feet	CalEEMod Factor[2]	Total Paintable Surface Area	Paintable Interior Area[1]	Paintable Exterior Area[1]
School Structures					
High School	17,456	2.0	34,912	26,184	8,728
			34,912	**26,184**	**8,728**
Parking					
Parking Lot	4,544	6%	273	-	273
			273		273

[1]CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.

[2]The program assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage defined by the user.

Construction Mitigation

NCUAQMD Rule 104

Replace Ground Cover	PM10:	5	% Reduction
	PM25:	5	% Reduction
Water Exposed Area	Frequency:	2	per day
	PM10:	61	% Reduction
	PM25:	61	% Reduction
	Clean Paved Road	9	% PM Reduction

Pacific Gas and Electric Carbon Intensity Factors

CO2:	203.98	pounds per megawatt hour
CH4:	0.033	pound per megawatt hour
N2O:	0.004	pound per megawatt hour

Global Warming Potentials (GWP)

	AR4	AR5
CO_2	1	1
CH_4	25	28
N_2O	298	265

Based on Intergovernmental Panel on Climate Change Fourth Assessment Report global warming potentials for CH4 and N2O; Intergovernmental Panel on Climate Change (IPCC).

Building Demolition Haul Trip Calculation

*Conversion factors**

0.046	ton/SF
1.2641662	tons/cy
20	tons
15.82070459	CY
0.791035229	CY/ton

Building	BSF Demo	Tons/SF	Tons	Haul Truck (CY)	Haul Truck (Ton)	Round Trips	Total Trip Ends
Multi-Use Building Demolition	9,000	0.046	414	16	20.00	21	41

*CalEEMod User's Guide

Construction Activities and Schedule Assumptions

* based on information provided by the District

Construction Schedule				
Construction Activities	**Phase Type**	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Building Demolition	Demolition	6/1/2024	6/8/2024	5
Building Demolition Debris Haul	Demolition	6/1/2024	6/8/2024	5
Site Preparation	Site Preparation	6/1/2024	6/4/2024	2
Site Preparation Soil Haul	Site Preparation	6/1/2024	6/4/2024	2
Grading	Grading	6/4/2024	6/8/2024	4
Utility Trenching	Trenching	6/8/2024	6/14/2024	5
Building Construction	Building Construction	6/14/2024	3/19/2025	199
Paving	Paving	3/6/2025	3/19/2025	10
Architectural Coating	Architectural Coating	3/6/2025	3/19/2025	10
Finishing/Landscaping	Trenching	3/13/2025	3/19/2025	5

Normalization Calculations *

CalEEMod Defaults Construction Duration (Library)	
291	days of construction
0.80	years of construction
9.57	months of construction

Assumed Construction Duration	
6/1/2024	6/1/2025
365	days
12.00	months

Norm Factor: 1.25

Construction Schedule				
Construction Activities	**Phase Type**	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Building Demolition	Demolition	6/1/2024	6/11/2024	7
Building Demolition Debris Haul	Demolition	6/1/2024	6/11/2024	7
Site Preparation	Site Preparation	6/1/2024	6/5/2024	3
Site Preparation Soil Haul	Site Preparation	6/1/2024	6/5/2024	3
Grading	Grading	6/5/2024	6/11/2024	5
Utility Trenching	Trenching	6/11/2024	6/19/2024	7
Building Construction	Building Construction	6/19/2024	6/3/2025	250
Paving	Paving	5/16/2025	6/3/2025	13
Architectural Coating	Architectural Coating	5/16/2025	6/3/2025	13
Finishing/Landscaping	Trenching	5/26/2025	6/3/2025	7

Overlapping Construction Schedule			
Construction Activities	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Building Demolition and Debris Haul, Site Preparation and Soil Haul	6/1/2024	6/4/2024	2
Building Demolition and Debris Haul, Site Preparation and Soil Haul, and Grading	6/5/2024	6/5/2024	1
Building Demolition and Debris Haul, and Grading	6/6/2024	6/10/2024	3
Building Demolition and Debris Haul, Grading, and Utility Trenching	6/11/2024	6/11/2024	1
Utility Trenching	6/11/2024	6/18/2024	6
Utility Trenching and Building Construction 2024	6/19/2024	6/19/2024	1
Building Construction 2024	6/20/2024	12/31/2024	139
Building Construction 2025	1/1/2025	5/15/2025	97
Building Construction 2025, Paving, and Architectural Coating	5/16/2025	5/25/2025	6
Building Construction 2025, Paving, Architectural Coating, and Finishing/Landscaping	5/26/2025	6/3/2025	7

CalEEMod Construction Off-Road Equipment Inputs

**Based on CalEEMod defaults, assumed equipment would not be shared for most conservative results*

General Construction Hours: 8 hours btwn 7:00 AM to 4:00 PM (with 1 hr break), Mon-Fri

Water Truck Vendor Trip Calculation

Amount of Water (gal/acre/day)[1]	Water Truck Capacity (gallons)[2]
10,000	4,000

Notes:

[1] *Based on data provided in Guidance for Application for Dust Control Permit Maricopa County Air Quality Department. 2005, June. Guidance for Application of Dust Control Permit. https://www.epa.gov/sites/default/files/2019-04/documents/mr_guidanceforapplicationfordustcontrolpermit.pdf)*

[2] *Based on standard water truck capacity: McLellan Industries. 2022, January (access). Water Trucks. https://www.mclellanindustries.com/trucks/water-trucks/*

[3] *Assumes that dozers, tractors/loaders/backhoes, and graders can disturb 0.50 acres per day and scrapers can disturb 1 acre per day.*

Construction Equipment Details					
Equipment	**# of Equipment**	**hr/day**	**hp**	**load factor***	**total trips (per day)**
Building Demolition					
Concrete/Industrial Saws	1	8	33	0.73	
Rubber Tired Dozers	1	8	367	0.4	
Tractors/Loaders/Backhoes	3	8	84	0.37	
Worker Trips					13
Vendor Trips					0
Hauling Trips					0
Water Trucks (Added to Vendor Trips)		Acres Disturbed[3]:	2		10
Building Demolition Debris Haul					
no additional equipment required for debris haul					
Worker Trips					0
Vendor Trips					0
Hauling Trips (per day)					6
Site Preparation					
Graders	1	8	148	0.41	
Rubber Tired Dozers	1	7	367	0.4	
Tractors/Loaders/Backhoes	1	8	84	0.37	
Worker Trips					8
Vendor Trips					0
Hauling Trips					0
Water Trucks (Added to Vendor Trips)		Acres Disturbed[3]:	1.5		8
Site Preparation Soil Haul					
no additional equipment required for soil haul					
Worker Trips					0
Vendor Trips					0
Hauling Trips (per day)					63
Grading					
Graders	1	8	148	0.41	
Rubber Tired Dozers	1	8	367	0.4	
Tractors/Loaders/Backhoes	2	7	84	0.37	
Worker Trips					10
Vendor Trips					0
Hauling Trips					0
Water Trucks (Added to Vendor Trips)		Acres Disturbed[3]:	2		10

Utilities Trenching						
	Excavator	1	8	36	0.3819	
	Worker Trips					3
	Vendor Trips					0
	Hauling Trips					0
Building Construction						
	Cranes	1	6	367	0.29	
	Forklifts	1	6	82	0.2	
	Generator Sets	1	8	14	0.74	
	Tractors/Loaders/Backhoes	1	6	84	0.37	
	Welders	3	8	46	0.45	
	Worker Trips					19
	Vendor Trips					7
	Hauling Trips					0
Paving						
	Cement and Mortar Mixers	1	6	10	0.56	
	Pavers	1	6	81	0.42	
	Paving Equipment	1	8	89	0.36	
	Rollers	1	7	36	0.38	
	Tractors/Loaders/Backhoes	1	8	84	0.37	
	Worker Trips					13
	Vendor Trips					0
	Hauling Trips					0
Architectural Coating (surface lots, etc…)						
	Air Compressors	1	6	37	0.48	
	Worker Trips*					4
	Vendor Trips					0
	Hauling Trips					0
Finishing/Landscaping						
	Excavator	1	8	158	0.3819	
	Worker Trips					3
	Vendor Trips					0
	Hauling Trips					0

Phase Name	Worker Trip Ends Per Day	Vendor Trip Ends Per Day	Haul Truck Trip Ends Per Day	Total Haul Truck Trip Ends	Total Trip Ends Per Day	Start Date	End Date	Workdays
Site Preparation	8	8	0	0	16	6/1/2024	6/5/2024	3
Site Preparation Soil Haul	0	0	21	63	21	6/1/2024	6/5/2024	3
Grading	10	10	0	0	20	6/5/2024	6/11/2024	5
Utility Trenching	3	0	0	0	3	6/11/2024	6/19/2024	7
Building Construction	19	7	0	0	26	6/19/2024	6/3/2025	250
Paving	13	0	0	0	13	5/16/2025	6/3/2025	13
Architectural Coating	4	0	0	0	4	5/16/2025	6/3/2025	13
Finishing/Landscaping	3	0	0	0	3	5/26/2025	6/3/2025	7

Construction Activity (Overlapping)	Worker Trip Ends Per Day	Vendor Trip Ends Per Day	Haul Truck Trip Ends Per Day	Total Trip Ends Per Day	Start Date	End Date	Workdays
Site Preparation and Soil Haul	8	8	21	37	6/1/2024	6/4/2024	2
Site Preparation and Soil Haul and Grading	18	18	21	57	6/5/2024	6/5/2024	1
Grading	10	10	0	20	6/6/2024	6/10/2024	3
Grading and Utility Trenching	13	10	0	23	6/11/2024	6/11/2024	1
Utility Trenching	3	0	0	3	6/11/2024	6/18/2024	6
Utility Trenching and Building Construction 2024	22	7	0	29	6/19/2024	6/19/2024	1
Building Construction 2024	19	7	0	26	6/20/2024	12/31/2024	139
Building Construction 2025	19	7	0	26	1/1/2025	5/15/2025	97
Building Construction 2025, Paving, and Architectural Coating	36	7	0	43	5/16/2025	5/25/2025	6
Building Construction 2025, Paving, Architectural Coating, and Finishing/Landscaping	39	7	0	46	5/26/2025	6/3/2025	7
Maximum Daily Trips	**39**	**18**	**21**	**57**			

CalEEMod Inputs- Glen Paul School Modernization Project, Operations

Name:	Glen Paul School Modernization Project, Operations
Project Number:	HCOE-01
Project Location:	2501 Cypress Ave, Eureka, CA 95503
County/Air Basin:	Humboldt County
Climate Zone:	1
Land Use Setting:	Suburban
Operational Year:	2025
Utility Company:	Redwood Coast Energy Authority (RCEA)/PGE
Air Basin:	North Coast Air Basin
Air District:	North Coast Unified Air Quality Management District

Project Site Acreage	9.79
Disturbed Site Acreage	1.02

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet
Educational	High School	17.456	1000 sqft	0.4007346189	17,456
Parking	Parking Lot	4.544	1000 sqft	0.10	4,544
Parking*	Other Non-asphalt Surfaces (Landscape)	6.296	1000 sqft	0.14	6,296
Parking*	Other Non-asphalt Surfaces (Hardscape)	9.740	1000 sqft	0.22	9,740
Parking	Other Non-asphalt Surfaces (Playfields and Remaining Area)	6.395	1000 sqft	0.15	6,395
				1.02	

Net Trips

Land Use Type	Average Daily Trips	CalEEMod Trip Rate	Saturday Trips	CalEEMod Trip Rate	Sunday Trips	CalEEMod Trip Rate
High School	113	**6.47**	0	**0.00**	0	**0.00**

Source: ITE Trip Generation Manual 11th Ed. default trips were used to calculate the increase in student capacity by 50 students

CalEEMod Default Water Use [1]

	Indoor (gpy)	Outdoor (gpy)	Total
Elementary School	121,212	0	121,212
Landscaping	0	53,393	53,393
Total	**121,212**	**53,393**	**174,605**

Notes

[1] Assumes 100% aerobic treatment.

CalEEMod Default Solid Waste

Land Use	Total Solid Waste (tons/unit/yr)	Total Solid Waste (tons/yr)
Solid Waste	1.30	22.69

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)
High School	78,628.52	766,152.33	**62,906.86**	**759,410.01**	15,721.65	6,742.32
Parking Lot	3,980.54	0.00	**3,980.54**	**0.00**	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	**0.00**	**0.00**	0.00	0.00

Architectural Coating

	Percent Painted
Interior Painted:	100%
Exterior Painted:	100%

CalEEMod

Interior Paint VOC content:	250	grams per liter
Exterior Paing VOC content:	250	grams per liter

Structures	Land Use Square Feet	CalEEMod Factor[2]	Total Paintable Surface Area	Paintable Interior Area[1]	Paintable Exterior Area[1]
School Structures					
High School	17,456	2.0	34,912	26,184	8,728
			34,912	**26,184**	**8,728**
Parking					
Parking Lot	4,544	6%	273	-	273
			273		273

[1]CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.

[2] The program assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage defined by the user.

Pacific Gas and Electric Carbon Intensity Factors

CO2:	203.98	pounds per megawatt hour
CH4:	0.033	pound per megawatt hour
N2O:	0.004	pound per megawatt hour

Global Warming Potentials (GWP)		
	AR4	**AR5**
CO_2	1	1
CH_4	25	28
N_2O	298	265

Based on Intergovernmental Panel on Climate Change Fourth Assessment Report global warming potentials for CH4 and N2O; Intergovernmental Panel on Climate Change (IPCC).

CalEEMod Outputs

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Glen Paul High School
Lead Agency	
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.9
Precipitation (days)	77
Location	2501 Cypress Ave, Eureka, CA 95503, USA
County	Humboldt
City	Unincorporated
Air District	North Coast Unified APCD
Air Basin	North Coast
TAZ	106
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
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
Elementary School	17.5	1000sqft	0.4	17456	0	0		
Parking Lot	4.54	1000sqft	0.1	4544	0	0		
Other Non-Asphalt Surfaces	6.3	1000sqft	0.14	6296	6296	0		
Other Non-Asphalt Surfaces	9.74	1000sqft	0.22	9740	0	0		
Other Non-Asphalt Surfaces	6.39	1000sqft	0.15	6395	0	0		

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-12	Sweep Paved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Un/Mit.	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Unmit.		5.97	33.4	53.4	47.4	0.13	2.16	16.3	18.4	2	7.07	9.07		12944	12944	0.34	0.97	12.6	13254
Mit.		5.97	33.4	53.4	47.4	0.13	2.16	8.12	10.3	2	3.15	5.14		12944	12944	0.34	0.97	12.6	13254
% Reduced								50.1	44.2		55.5	43.3							
Daily, Winter (Max)																			
Unmit.		1.49	1.25	9.84	11.3	0.02	0.37	0.17	0.54	0.34	0.04	0.39		2108	2108	0.08	0.05	0.03	2123
Mit.		1.49	1.25	9.84	11.3	0.02	0.37	0.17	0.54	0.34	0.04	0.39		2108	2108	0.08	0.05	0.03	2123
% Reduced																			
Average Daily (Max)																			
Unmit.		0.66	1.5	4.49	4.99	0.01	0.17	0.25	0.42	0.16	0.1	0.25		969	969	0.04	0.03	0.24	978
Mit.		0.66	1.5	4.49	4.99	0.01	0.17	0.16	0.33	0.16	0.05	0.21		969	969	0.04	0.03	0.24	978
% Reduced								36	21.4		46	17.2							
Annual (Max)																			
Unmit.		0.12	0.27	0.82	0.91	< 0.005		0.03	0.05	0.08	0.03	0.02	0.05		160	160	0.01	< 0.005		0.04	162
Mit.		0.12	0.27	0.82	0.91	< 0.005		0.03	0.03	0.06	0.03	0.01	0.04		160	160	0.01	< 0.005		0.04	162
% Reduced								36	21.4		46	17.2							

2.2. Construction Emissions by Year, Unmitigated

Year	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily - Summer (Max)																		
2024		5.97	5.01	53.4	47.4	0.13	2.16	16.3	18.4	2	7.07	9.07		12944	12944	0.34	0.97	12.6	13254
2025		2.38	33.4	15.7	20.6	0.03	0.59	0.3	0.88	0.54	0.07	0.61		3502	3502	0.14	0.06	1.66	3525
Daily - Winter (Max)																			
2024		1.49	1.25	9.84	11.3	0.02	0.37	0.17	0.54	0.34	0.04	0.39		2108	2108	0.08	0.05	0.03	2123
2025		1.41	1.18	9.32	11.1	0.02	0.33	0.17	0.5	0.3	0.04	0.35		2103	2103	0.08	0.04	0.03	2118
Average Daily																			
2024		0.66	0.55	4.49	4.99	0.01	0.17	0.25	0.42	0.16	0.1	0.25		969	969	0.04	0.03	0.24	978
2025		0.46	1.5	3.02	3.66	0.01	0.11	0.05	0.16	0.1	0.01	0.11		681	681	0.03	0.01	0.15	686
Annual																			
2024		0.12	0.1	0.82	0.91	< 0.005		0.03	0.05	0.08	0.03	0.02	0.05		160	160	0.01	< 0.005		0.04	162
2025		0.08	0.27	0.55	0.67	< 0.005		0.02	0.01	0.03	0.02	< 0.005	0.02		113	113	< 0.005		< 0.005	0.02	114

2.3. Construction Emissions by Year, Mitigated

Year	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily - Summer (Max)																		
2024		5.97	5.01	53.4	47.4	0.13	2.16	8.12	10.3	2	3.15	5.14		12944	12944	0.34	0.97	12.6	13254
2025		2.38	33.4	15.7	20.6	0.03	0.59	0.3	0.88	0.54	0.07	0.61		3502	3502	0.14	0.06	1.66	3525
Daily - Winter (Max)																			
2024		1.49	1.25	9.84	11.3	0.02	0.37	0.17	0.54	0.34	0.04	0.39		2108	2108	0.08	0.05	0.03	2123
2025		1.41	1.18	9.32	11.1	0.02	0.33	0.17	0.5	0.3	0.04	0.35		2103	2103	0.08	0.04	0.03	2118
Average Daily																			
2024		0.66	0.55	4.49	4.99	0.01	0.17	0.16	0.33	0.16	0.05	0.21		969	969	0.04	0.03	0.24	978
2025		0.46	1.5	3.02	3.66	0.01	0.11	0.05	0.16	0.1	0.01	0.11		681	681	0.03	0.01	0.15	686
Annual																			
2024		0.12	0.1	0.82	0.91	< 0.005		0.03	0.03	0.06	0.03	0.01	0.04		160	160	0.01	< 0.005		0.04	162
2025		0.08	0.27	0.55	0.67	< 0.005		0.02	0.01	0.03	0.02	< 0.005	0.02		113	113	< 0.005		< 0.005	0.02	114

2.4. Operations Emissions Compared Against Thresholds

Un/Mit.	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Unmit.		0.96	1.38	0.68	4.81	0.01	0.02	0.14	0.16	0.02	0.03	0.05	12.5	735	747	1.31	0.03	1.99	792
Daily, Winter (Max)																			
Unmit.		0.63	1.07	0.71	3.26	0.01	0.02	0.14	0.16	0.02	0.03	0.05	12.5	727	739	1.32	0.03	0.12	783
Average Daily (Max)																			
Unmit.		0.62	1.06	0.55	3.18	< 0.005		0.02	0.1	0.12	0.02	0.02	0.04	12.5	607	620	1.3	0.02	0.66	660
Annual (Max)																			
Unmit.		0.11	0.19	0.1	0.58	< 0.005	< 0.005		0.02	0.02	< 0.005	< 0.005	0.01	2.06	101	103	0.22	< 0.005		0.11	109

2.5. Operations Emissions by Sector, Unmitigated

Sector	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Mobile		0.59	0.56	0.46	2.71	< 0.005		0.01	0.14	0.14	0.01	0.03	0.03		435	435	0.04	0.03	1.92	447
Area		0.34	0.8	0.02	1.93	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005			7.95	7.95	< 0.005	< 0.005		7.97
Energy		0.02	0.01	0.21	0.17	< 0.005		0.02		0.02	0.02		0.02		292	292	0.03	< 0.005		293
Water														0.23	0.39	0.62	0.02	< 0.005		1.39
Waste														12.2	0	12.2	1.22	0		42.8
Refrig.																			0.07	0.07
Total		0.96	1.38	0.68	4.81	0.01	0.02	0.14	0.16	0.02	0.03	0.05	12.5	735	747	1.31	0.03	1.99	792
Daily, Winter (Max)																			
Mobile		0.6	0.57	0.51	3.09	< 0.005		0.01	0.14	0.14	0.01	0.03	0.03		435	435	0.04	0.03	0.05	446
Area			0.49																	
Energy		0.02	0.01	0.21	0.17	< 0.005		0.02		0.02	0.02		0.02		292	292	0.03	< 0.005		293
Water														0.23	0.39	0.62	0.02	< 0.005		1.39
Waste														12.2	0	12.2	1.22	0		42.8
Refrig.																			0.07	0.07
Total		0.63	1.07	0.71	3.26	0.01	0.02	0.14	0.16	0.02	0.03	0.05	12.5	727	739	1.32	0.03	0.12	783
Average Daily																			
Mobile		0.43	0.4	0.34	2.06	< 0.005	< 0.005		0.1	0.1	< 0.005		0.02		311	311	0.03		0.02	0.59	319
Area		0.17	0.64	0.01	0.95	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005			3.92	3.92	< 0.005	< 0.005			3.93
Energy		0.02	0.01	0.21	0.17	< 0.005		0.02		0.02	0.02		0.02		292	292	0.03	< 0.005			293
Water														0.23	0.39	0.62	0.02	< 0.005			1.39
Waste														12.2	0	12.2	1.22	0			42.8
Refrig.																			0.07		0.07
Total		0.62	1.06	0.55	3.18	< 0.005		0.02	0.1	0.12	0.02	0.02	0.04	12.5	607	620	1.3		0.02	0.66	660
Annual																					
Mobile		0.08	0.07	0.06	0.38	< 0.005	< 0.005		0.02	0.02	< 0.005	< 0.005	< 0.005		51.5	51.5	< 0.005		< 0.005		0.1	52.8
Area		0.03	0.12	< 0.005	0.17	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005			0.65	0.65	< 0.005		< 0.005			0.65
Energy	< 0.005		< 0.005		0.04	0.03	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		48.3	48.3	< 0.005		< 0.005			48.5
Water														0.04	0.06	0.1	< 0.005		< 0.005			0.23
Waste														2.02	0	2.02	0.2	0				7.08
Refrig.																			0.01			0.01
Total		0.11	0.19	0.1	0.58	< 0.005	< 0.005		0.02	0.02	< 0.005	< 0.005	0.01	2.06	101	103	0.22	< 0.005		0.11	109

2.6. Operations Emissions by Sector, Mitigated

Sector	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Mobile		0.59	0.56	0.46	2.71	< 0.005		0.01	0.14	0.14	0.01	0.03	0.03		435	435	0.04	0.03	1.92	447
Area		0.34	0.8	0.02	1.93	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005			7.95	7.95	< 0.005	< 0.005		7.97
Energy		0.02	0.01	0.21	0.17	< 0.005		0.02		0.02	0.02		0.02		292	292	0.03	< 0.005		293
Water														0.23	0.39	0.62	0.02	< 0.005		1.39
Waste														12.2	0	12.2	1.22	0		42.8
Refrig.																			0.07	0.07
Total		0.96	1.38	0.68	4.81	0.01	0.02	0.14	0.16	0.02	0.03	0.05	12.5	735	747	1.31	0.03	1.99	792
Daily, Winter (Max)																			
Mobile		0.6	0.57	0.51	3.09	< 0.005		0.01	0.14	0.14	0.01	0.03	0.03		435	435	0.04	0.03	0.05	446
Area			0.49																	
Energy		0.02	0.01	0.21	0.17	< 0.005		0.02		0.02	0.02		0.02		292	292	0.03	< 0.005		293
Water														0.23	0.39	0.62	0.02	< 0.005		1.39
Waste														12.2	0	12.2	1.22	0		42.8
Refrig.																			0.07	0.07
Total		0.63	1.07	0.71	3.26	0.01	0.02	0.14	0.16	0.02	0.03	0.05	12.5	727	739	1.32	0.03	0.12	783
Average Daily																			
Mobile		0.43	0.4	0.34	2.06	< 0.005	< 0.005		0.1	0.1	< 0.005		0.02		311	311	0.03		0.02	0.59	319
Area		0.17	0.64	0.01	0.95	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005			3.92	3.92	< 0.005	< 0.005			3.93
Energy		0.02	0.01	0.21	0.17	< 0.005		0.02		0.02	0.02		0.02		292	292	0.03	< 0.005			293
Water														0.23	0.39	0.62	0.02	< 0.005			1.39
Waste														12.2	0	12.2	1.22	0			42.8
Refrig.																			0.07		0.07
Total		0.62	1.06	0.55	3.18	< 0.005		0.02	0.1	0.12	0.02	0.02	0.04	12.5	607	620	1.3		0.02	0.66	660
Annual																					
Mobile		0.08	0.07	0.06	0.38	< 0.005	< 0.005		0.02	0.02	< 0.005	< 0.005	< 0.005		51.5	51.5	< 0.005		< 0.005		0.1	52.8
Area		0.03	0.12	< 0.005	0.17	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005			0.65	0.65	< 0.005		< 0.005			0.65
Energy	< 0.005		< 0.005		0.04	0.03	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		48.3	48.3	< 0.005		< 0.005			48.5
Water														0.04	0.06	0.1	< 0.005		< 0.005			0.23
Waste														2.02	0	2.02	0.2	0				7.08
Refrig.																			0.01			0.01
Total		0.11	0.19	0.1	0.58	< 0.005	< 0.005		0.02	0.02	< 0.005	< 0.005	0.01	2.06	101	103	0.22	< 0.005		0.11	109

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		1.92	1.61	15.6	16	0.02	0.67		0.67	0.62		0.62		2494	2494	0.1	0.02	2502
Demolition								0	0		0	0						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0.04	0.03	0.3	0.31	< 0.005	0.01		0.01	0.01		0.01		47.8	47.8	< 0.005	< 0.005	48
Demolition								0	0		0	0						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment		0.01	0.01	0.05	0.06	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		7.92	7.92	< 0.005	< 0.005	7.94
Demolition								0	0		0	0						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.08	0.07	0.06	0.65	0	0	0.01	0.01	0	0	0		89.5	89.5	0.01	< 0.005	91.2
Vendor		0.01	0.01	0.37	0.13	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01		238	238	< 0.005	0.03	0.61	249
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker		< 0.005	< 0.005	< 0.005		0.01	0	0	< 0.005	< 0.005		0	0	1.72	1.72	< 0.005	< 0.005	< 0.005	1.75
Vendor		< 0.005	< 0.005		0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		4.56	4.56	< 0.005	< 0.005	0.01	4.76
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																		
Worker		< 0.005	< 0.005	< 0.005		0	0	< 0.005	< 0.005		0	0	0	0.28	0.28	< 0.005	< 0.005	< 0.005	0.29
Vendor		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.75	0.75	< 0.005	< 0.005	< 0.005	0.79
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0

3.2. Demolition (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		1.92	1.61	15.6	16	0.02	0.67		0.67	0.62		0.62		2494	2494	0.1	0.02	2502
Demolition								0	0		0	0						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0.04	0.03	0.3	0.31	< 0.005	0.01		0.01	0.01		0.01		47.8	47.8	< 0.005	< 0.005	48
Demolition								0	0		0	0						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment		0.01	0.01	0.05	0.06	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		7.92	7.92	< 0.005	< 0.005	7.94
Demolition								0	0		0	0						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.08	0.07	0.06	0.65	0	0	0.01	0.01	0	0	0		89.5	89.5	0.01	< 0.005	91.2
Vendor		0.01	0.01	0.37	0.13	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01		238	238	< 0.005	0.03	0.61	249
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker		< 0.005	< 0.005	< 0.005		0.01	0	0	< 0.005	< 0.005		0	0	1.72	1.72	< 0.005	< 0.005	< 0.005	1.75
Vendor		< 0.005	< 0.005		0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		4.56	4.56	< 0.005	< 0.005	0.01	4.76
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																		
Worker		< 0.005	< 0.005	< 0.005		0	0	< 0.005	< 0.005		0	0	0	0.28	0.28	< 0.005	< 0.005	< 0.005	0.29
Vendor		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.75	0.75	< 0.005	< 0.005	< 0.005	0.79
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0

3.3. Demolition (2024) - Unmitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Demolition								1.29	1.29		0.2	0.2						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Demolition								0.02	0.02		< 0.005	< 0.005						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Demolition								< 0.005	< 0.005		< 0.005	< 0.005						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Hauling		0.01	0.01	0.62	0.1	0.01	0.01	0.03	0.04	0.01	0.01	0.02		442	442	< 0.005	0.07	0.86	463
Daily, Winter (Max)																		
Average Daily																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling	< 0.005	< 0.005		0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		8.47	8.47	< 0.005	< 0.005	0.01	8.88
Annual																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			1.4	1.4	< 0.005	< 0.005	< 0.005	1.47

3.4. Demolition (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Demolition								1.29	1.29		0.2	0.2						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Demolition								0.02	0.02		< 0.005	< 0.005						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Demolition								< 0.005	< 0.005		< 0.005	< 0.005						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		0.01	0.01	0.62	0.1	0.01	0.01	0.03	0.04	0.01	0.01	0.02		442	442	< 0.005	0.07	0.86	463
Daily, Winter (Max)																		
Average Daily																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling	< 0.005	< 0.005		0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		8.47	8.47	< 0.005	< 0.005	0.01	8.88
Annual																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			1.4	1.4	< 0.005	< 0.005	< 0.005	1.47

3.5. Site Preparation (2024) - Unmitigated

Location	TOG	ROG	NOx	CO	SO_x	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_x	$NBCO_x$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		1.7	1.43	13.7	12.9	0.02	0.65		0.65	0.59		0.59		2064	2064	0.08	0.02	2071
Dust From Material Movement								6.26	6.26		3	3						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0.01	0.01	0.11	0.11	< 0.005	0.01		0.01	< 0.005		< 0.005		17	17	< 0.005	< 0.005	17
Dust From Material Movement								0.05	0.05		0.02	0.02						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment	< 0.005	< 0.005		0.02	0.02	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		2.81	2.81	< 0.005	< 0.005		2.82
Dust From Material Movement								0.01	0.01		< 0.005	< 0.005						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.05	0.04	0.04	0.39	0	0	< 0.005	< 0.005	0	0	0		53.7	53.7	< 0.005	< 0.005	0.26	54.7
Vendor		0.01	0.01	0.3	0.1	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01		190	190	< 0.005	0.03	0.49	199
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005		0	0	< 0.005	< 0.005		0	0	0.44	0.44	< 0.005	< 0.005	< 0.005	0.45
Vendor		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		1.56	1.56	< 0.005	< 0.005	< 0.005	1.63
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005		0	0	< 0.005	< 0.005		0	0	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Vendor		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.26	0.26	< 0.005	< 0.005	< 0.005	0.27
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0

3.6. Site Preparation (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		1.7	1.43	13.7	12.9	0.02	0.65		0.65	0.59		0.59		2064	2064	0.08	0.02	2071
Dust From Material Movement								2.44	2.44		1.17	1.17						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0.01	0.01	0.11	0.11	< 0.005	0.01		0.01	< 0.005		< 0.005		17	17	< 0.005	< 0.005	17
Dust From Material Movement								0.02	0.02		0.01	0.01						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment	< 0.005	< 0.005		0.02	0.02	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		2.81	2.81	< 0.005	< 0.005		2.82
Dust From Material Movement								< 0.005	< 0.005		< 0.005	< 0.005						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0

Offsite
Daily, Summer (Max)

Worker		0.05	0.04	0.04	0.39	0	0	< 0.005	< 0.005		0	0	0		53.7	53.7	< 0.005	< 0.005	0.26	54.7
Vendor		0.01	0.01	0.3	0.1	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01			190	190	< 0.005	0.03	0.49	199
Hauling		0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0
Daily, Winter (Max)																				
Average Daily																				
Worker	< 0.005	< 0.005	< 0.005	< 0.005		0	0	< 0.005	< 0.005		0	0	0		0.44	0.44	< 0.005	< 0.005	< 0.005	0.45
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			1.56	1.56	< 0.005	< 0.005	< 0.005	1.63
Hauling		0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0
Annual																				
Worker	< 0.005	< 0.005	< 0.005	< 0.005		0	0	< 0.005	< 0.005		0	0	0		0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			0.26	0.26	< 0.005	< 0.005	< 0.005	0.27
Hauling		0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0

3.7. Site Preparation (2024) - Unmitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0		0
Dust From Material Movement								0.03	0.03	< 0.005	< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0		0
Dust From Material Movement								0.005	0.005	< 0.005	< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0		0
Dust From Material Movement								0.005	0.005	< 0.005	< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Hauling		0.14	0.1	6.48	0.99	0.06	0.08	0.3	0.39	0.08	0.11	0.19		4611	4611	0.03	0.73	9.01	4840
Daily, Winter (Max)																		
Average Daily																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Hauling	< 0.005	< 0.005		0.05	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			37.9	37.9	< 0.005	0.01	0.03	39.7
Annual																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Hauling	< 0.005	< 0.005		0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			6.28	6.28	< 0.005	< 0.005	0.01	6.58

3.8. Site Preparation (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0		0
Dust From Material Movement								0.01	0.01	< 0.005	< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0		0
Dust From Material Movement								< 0.005	< 0.005	< 0.005	< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0		0
Dust From Material Movement								< 0.005	< 0.005	< 0.005	< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Hauling		0.14	0.1	6.48	0.99	0.06	0.08	0.3	0.39	0.08	0.11	0.19		4611	4611	0.03	0.73	9.01	4840
Daily, Winter (Max)																		
Average Daily																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Hauling	< 0.005	< 0.005		0.05	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			37.9	37.9	< 0.005	0.01	0.03	39.7
Annual																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Hauling	< 0.005	< 0.005		0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			6.28	6.28	< 0.005	< 0.005	0.01	6.58

3.9. Grading (2024) - Unmitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		1.96	1.65	15.9	15.4	0.02	0.74		0.74	0.68		0.68		2454	2454	0.1	0.02		2462
Dust From Material Movement								7.08	7.08		3.42	3.42						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0.03	0.02	0.22	0.21	< 0.005	0.01		0.01	0.01		0.01		33.6	33.6	< 0.005	< 0.005		33.7
Dust From Material Movement								0.1	0.1		0.05	0.05						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment	< 0.005	< 0.005		0.04	0.04	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		5.56	5.56	< 0.005	< 0.005		5.58
Dust From Material Movement								0.02	0.02		0.01	0.01						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.06	0.06	0.05	0.52	0	0	< 0.005	< 0.005		0	0	0		71.6	71.6	< 0.005	< 0.005	0.34	73
Vendor		0.01	0.01	0.37	0.13	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01			238	238	< 0.005	0.03	0.61	249
Hauling		0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker	< 0.005	< 0.005	< 0.005		0.01	0	0	< 0.005	< 0.005		0	0	0		0.98	0.98	< 0.005	< 0.005	< 0.005	1
Vendor	< 0.005	< 0.005		0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			3.26	3.26	< 0.005	< 0.005	< 0.005	3.4
Hauling		0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0
Annual																		
Worker	< 0.005	< 0.005	< 0.005		< 0.005	0	0	< 0.005	< 0.005		0	0	0		0.16	0.16	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			0.54	0.54	< 0.005	< 0.005	< 0.005	0.56
Hauling		0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0

3.10. Grading (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		1.96	1.65	15.9	15.4	0.02	0.74		0.74	0.68		0.68		2454	2454	0.1	0.02		2462
Dust From Material Movement								2.76	2.76		1.34	1.34						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0.03	0.02	0.22	0.21	< 0.005	0.01		0.01	0.01		0.01		33.6	33.6	< 0.005	< 0.005		33.7
Dust From Material Movement								0.04	0.04		0.02	0.02						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment	< 0.005	< 0.005		0.04	0.04	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		5.56	5.56	< 0.005	< 0.005		5.58
Dust From Material Movement								0.01	0.01		< 0.005	< 0.005						
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.06	0.06	0.05	0.52	0	0	< 0.005	< 0.005		0	0	0		71.6	71.6	< 0.005	< 0.005	0.34	73
Vendor		0.01	0.01	0.37	0.13	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01			238	238	< 0.005	0.03	0.61	249
Hauling		0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker	< 0.005	< 0.005	< 0.005		0.01	0	0	< 0.005	< 0.005		0	0	0		0.98	0.98	< 0.005	< 0.005	< 0.005	1
Vendor	< 0.005	< 0.005		0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			3.26	3.26	< 0.005	< 0.005	< 0.005	3.4
Hauling		0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0
Annual																		
Worker	< 0.005	< 0.005	< 0.005		< 0.005	0	0	< 0.005	< 0.005		0	0	0		0.16	0.16	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			0.54	0.54	< 0.005	< 0.005	< 0.005	0.56
Hauling		0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0

3.11. Building Construction (2024) - Unmitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		1.36	1.13	9.44	10.1	0.02	0.37		0.37	0.34		0.34		1801	1801	0.07	0.01		1807
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Off-Road Equipment		1.36	1.13	9.44	10.1	0.02	0.37		0.37	0.34		0.34		1801	1801	0.07	0.01		1807
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Average Daily																		
Off-Road Equipment		0.52	0.43	3.62	3.88	0.01	0.14		0.14	0.13		0.13		691	691	0.03	0.01		693
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment		0.1	0.08	0.66	0.71	< 0.005		0.03		0.03	0.02	0.02		114	114	< 0.005	< 0.005		115
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.12	0.11	0.09	0.97	0	0	0.01	0.01	0	0	0		134	134	0.01	0.01	0.64	136
Vendor		0.01	0.01	0.27	0.09	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01		173	173	< 0.005	0.03	0.45	181
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Worker		0.12	0.11	0.11	1.07	0	0	0.01	0.01	0	0	0		133	133	0.01	0.01	0.02	135
Vendor		0.01	0.01	0.28	0.1	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01		173	173	< 0.005	0.03	0.01	181
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Average Daily																		
Worker		0.05	0.04	0.04	0.39	0	0	< 0.005	< 0.005		0	0	0		51.3	51.3	< 0.005	< 0.005	0.11	52.2
Vendor	< 0.005	< 0.005		0.11	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			66.4	66.4	< 0.005	0.01	0.07	69.4
Hauling		0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0
Annual																		
Worker		0.01	0.01	0.01	0.07	0	0	< 0.005	< 0.005		0	0	0		8.49	8.49	< 0.005	< 0.005	0.02	8.64
Vendor	< 0.005	< 0.005		0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			11	11	< 0.005	< 0.005	0.01	11.5
Hauling		0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0

3.12. Building Construction (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_x	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_x	$NBCO_x$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		1.36	1.13	9.44	10.1	0.02	0.37		0.37	0.34		0.34		1801	1801	0.07	0.01	1807
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Off-Road Equipment		1.36	1.13	9.44	10.1	0.02	0.37		0.37	0.34		0.34		1801	1801	0.07	0.01	1807
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Average Daily																		
Off-Road Equipment		0.52	0.43	3.62	3.88	0.01	0.14		0.14	0.13		0.13		691	691	0.03	0.01	693
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment		0.1	0.08	0.66	0.71	< 0.005	0.03		0.03	0.02		0.02		114	114	< 0.005	< 0.005	115
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.12	0.11	0.09	0.97	0	0	0.01	0.01	0	0	0		134	134	0.01	0.01	0.64	136
Vendor		0.01	0.01	0.27	0.09	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01		173	173	< 0.005	0.03	0.45	181
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																		
Worker		0.12	0.11	0.11	1.07	0	0	0.01	0.01	0	0	0		133	133	0.01	0.01	0.02	135
Vendor		0.01	0.01	0.28	0.1	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01		173	173	< 0.005	0.03	0.01	181
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Average Daily																		
Worker		0.05	0.04	0.04	0.39	0	0	< 0.005	< 0.005		0	0		51.3	51.3	< 0.005	< 0.005	0.11	52.2
Vendor	< 0.005	< 0.005		0.11	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		66.4	66.4	< 0.005	0.01	0.07	69.4
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																		
Worker		0.01	0.01	0.01	0.07	0	0	< 0.005	< 0.005		0	0		8.49	8.49	< 0.005	< 0.005	0.02	8.64
Vendor	< 0.005	< 0.005		0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		11	11	< 0.005	< 0.005	0.01	11.5
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0

3.13. Building Construction (2025) - Unmitigated

Location	TOG	ROG	NOx	CO	SO_x	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_x	$NBCO_x$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		1.28	1.07	8.95	10	0.02	0.33		0.33	0.3		0.3		1801	1801	0.07	0.01	1807
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Off-Road Equipment		1.28	1.07	8.95	10	0.02	0.33		0.33	0.3		0.3		1801	1801	0.07	0.01	1807
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Average Daily																		
Off-Road Equipment		0.39	0.32	2.7	3.02	0.01	0.1		0.1	0.09		0.09		543	543	0.02	< 0.005	545
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment		0.07	0.06	0.49	0.55	< 0.005	0.02		0.02	0.02		0.02		89.9	89.9	< 0.005	< 0.005	90.2
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.12	0.11	0.09	0.91	0	0	0.01	0.01	0	0	0		131	131	0.01	0.01	0.61	134
Vendor		0.01	0.01	0.26	0.09	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01		170	170	< 0.005	0.02	0.45	178
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																		
Worker		0.12	0.11	0.1	1	0	0	0.01	0.01	0	0	0		131	131	0.01	0.01	0.02	133
Vendor		0.01	0.01	0.27	0.09	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01		170	170	< 0.005	0.02	0.01	178
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Average Daily																		
Worker		0.03	0.03	0.03	0.29	0	0	< 0.005	< 0.005		0	0		39.6	39.6	< 0.005	< 0.005	0.08	40.3
Vendor	< 0.005	< 0.005		0.08	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		51.3	51.3	< 0.005	0.01	0.06	53.6
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																		
Worker		0.01	0.01	0.01	0.05	0	0	< 0.005	< 0.005		0	0		6.56	6.56	< 0.005	< 0.005	0.01	6.67
Vendor	< 0.005	< 0.005		0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		8.5	8.5	< 0.005	< 0.005	0.01	8.87
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0

3.14. Building Construction (2025) - Mitigated

Location	TOG	ROG	NOx	CO	SO_x	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_x	$NBCO_x$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		1.28	1.07	8.95	10	0.02	0.33		0.33	0.3		0.3		1801	1801	0.07	0.01	1807
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Off-Road Equipment		1.28	1.07	8.95	10	0.02	0.33		0.33	0.3		0.3		1801	1801	0.07	0.01	1807
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Average Daily																		
Off-Road Equipment		0.39	0.32	2.7	3.02	0.01	0.1		0.1	0.09		0.09		543	543	0.02	< 0.005	545
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment		0.07	0.06	0.49	0.55	< 0.005	0.02		0.02	0.02		0.02		89.9	89.9	< 0.005	< 0.005	90.2
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.12	0.11	0.09	0.91	0	0	0.01	0.01	0	0	0		131	131	0.01	0.01	0.61	134
Vendor		0.01	0.01	0.26	0.09	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01		170	170	< 0.005	0.02	0.45	178
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																		
Worker		0.12	0.11	0.1	1	0	0	0.01	0.01	0	0	0		131	131	0.01	0.01	0.02	133
Vendor		0.01	0.01	0.27	0.09	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01		170	170	< 0.005	0.02	0.01	178
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Average Daily																		
Worker		0.03	0.03	0.03	0.29	0	0	< 0.005	< 0.005		0	0		39.6	39.6	< 0.005	< 0.005	0.08	40.3
Vendor	< 0.005	< 0.005		0.08	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		51.3	51.3	< 0.005	0.01	0.06	53.6
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																		
Worker		0.01	0.01	0.01	0.05	0	0	< 0.005	< 0.005		0	0		6.56	6.56	< 0.005	< 0.005	0.01	6.67
Vendor	< 0.005	< 0.005		0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		8.5	8.5	< 0.005	< 0.005	0.01	8.87
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0

3.15. Paving (2025) - Unmitigated

Location	TOG	ROG	NOx	CO	SO_x	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_x	$NBCO_x$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0.59	0.49	4.63	6.5	0.01	0.2		0.2	0.19		0.19		992	992	0.04	0.01	995
Paving			0.02															
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0.02	0.02	0.16	0.23	< 0.005	0.01		0.01	0.01		0.01		35.3	35.3	< 0.005	< 0.005	35.4
Paving		< 0.005																
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment	< 0.005	< 0.005		0.03	0.04	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		5.85	5.85	< 0.005	< 0.005	5.87
Paving		< 0.005																
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.08	0.07	0.06	0.61	0	0	0.01	0.01	0	0	0		88	88	0.01	< 0.005	0.41	89.7
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker	< 0.005	< 0.005	< 0.005		0.02	0	0	< 0.005	< 0.005		0	0		3.14	3.14	< 0.005	< 0.005	0.01	3.19
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																		
Worker	< 0.005	< 0.005	< 0.005	< 0.005		0	0	< 0.005	< 0.005		0	0		0.52	0.52	< 0.005	< 0.005	< 0.005	0.53
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0

3.16. Paving (2025) - Mitigated

Location	TOG	ROG	NOx	CO	SO_x	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_x	$NBCO_x$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0.59	0.49	4.63	6.5	0.01	0.2		0.2	0.19		0.19		992	992	0.04	0.01	995
Paving			0.02															
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0.02	0.02	0.16	0.23	< 0.005	0.01		0.01	0.01		0.01		35.3	35.3	< 0.005	< 0.005	35.4
Paving		< 0.005																
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment	< 0.005	< 0.005		0.03	0.04	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		5.85	5.85	< 0.005	< 0.005	5.87
Paving		< 0.005																
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.08	0.07	0.06	0.61	0	0	0.01	0.01	0	0	0		88	88	0.01	< 0.005	0.41	89.7
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker	< 0.005	< 0.005	< 0.005		0.02	0	0	< 0.005	< 0.005		0	0		3.14	3.14	< 0.005	< 0.005	0.01	3.19
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																		
Worker	< 0.005	< 0.005	< 0.005	< 0.005		0	0	< 0.005	< 0.005		0	0		0.52	0.52	< 0.005	< 0.005	< 0.005	0.53
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0

3.17. Architectural Coating (2025) - Unmitigated

Location	TOG	ROG	NOx	CO	SO_x	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_x	$NBCO_x$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0.15	0.13	0.88	1.14	< 0.005		0.03		0.03	0.03		0.03	134	134	0.01	< 0.005	134
Architectural Coatings			31.4															
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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			4.76	4.76	< 0.005	< 0.005	4.77
Architectural Coatings			1.12															
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual																		
Off-Road Equipment		< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005			0.79	0.79	< 0.005	< 0.005	0.79
Architectural Coatings			0.2															
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.02	0.02	0.02	0.18	0	0	< 0.005	< 0.005		0	0	0	26.3	26.3	< 0.005	< 0.005	0.12	26.8
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker		< 0.005	< 0.005	< 0.005	0.01	0	0	< 0.005	< 0.005		0	0	0	0.94	0.94	< 0.005	< 0.005	< 0.005	0.95
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005		0	0	0	0.16	0.16	< 0.005	< 0.005	< 0.005	0.16
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

3.18. Architectural Coating (2025) - Mitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0.15	0.13	0.88	1.14	< 0.005		0.03		0.03	0.03		0.03	134	134	0.01	< 0.005	134
Architectural Coatings			31.4															
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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			4.76	4.76	< 0.005	< 0.005	4.77
Architectural Coatings			1.12															
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual																		
Off-Road Equipment		< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005			0.79	0.79	< 0.005	< 0.005	0.79
Architectural Coatings			0.2															
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.02	0.02	0.02	0.18	0	0	< 0.005	< 0.005		0	0	0	26.3	26.3	< 0.005	< 0.005	0.12	26.8
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker		< 0.005	< 0.005	< 0.005	0.01	0	0	< 0.005	< 0.005		0	0	0	0.94	0.94	< 0.005	< 0.005	< 0.005	0.95
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005		0	0	0	0.16	0.16	< 0.005	< 0.005	< 0.005	0.16
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

3.19. Trenching (2024) - Unmitigated

Location	TOG	ROG	NOx	CO	SO_x	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_x	$NBCO_x$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0.12	0.1	0.84	1.01	< 0.005		0.03		0.03	0.03		0.03	142	142	0.01	< 0.005	142
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005			2.72	2.72	< 0.005	< 0.005	2.73
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual																		
Off-Road Equipment		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005			0.45	0.45	< 0.005	< 0.005	0.45
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.02	0.01	0.01	0.13	0	0	< 0.005	< 0.005		0	0	0	17.9	17.9	< 0.005	< 0.005	0.09	18.2
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005		0	0	0	0.34	0.34	< 0.005	< 0.005	< 0.005	0.35
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005		0	0	0	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

3.20. Trenching (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0.12	0.1	0.84	1.01	< 0.005		0.03		0.03	0.03		0.03	142	142	0.01	< 0.005	142
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005			2.72	2.72	< 0.005	< 0.005	2.73
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual																		
Off-Road Equipment		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005			0.45	0.45	< 0.005	< 0.005	0.45
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.02	0.01	0.01	0.13	0	0	< 0.005	< 0.005		0	0	0	17.9	17.9	< 0.005	< 0.005	0.09	18.2
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005		0	0	0	0.34	0.34	< 0.005	< 0.005	< 0.005	0.35
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005		0	0	0	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

3.21. Trenching (2025) - Unmitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0.12	0.1	0.83	1.02	< 0.005		0.03		0.03	0.02		0.02	142	142	0.01	< 0.005	142
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005			2.72	2.72	< 0.005	< 0.005	2.73
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual																		
Off-Road Equipment		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005			0.45	0.45	< 0.005	< 0.005	0.45
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.02	0.01	0.01	0.12	0	0	< 0.005	< 0.005		0	0	0	17.6	17.6	< 0.005	< 0.005	0.08	17.9
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005		0	0	0	0.34	0.34	< 0.005	< 0.005	< 0.005	0.34
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005		0	0	0	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

3.22. Trenching (2025) - Mitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0.12	0.1	0.83	1.02	< 0.005		0.03		0.03	0.02		0.02	142	142	0.01	< 0.005	142
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005			2.72	2.72	< 0.005	< 0.005	2.73
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual																		
Off-Road Equipment		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005			0.45	0.45	< 0.005	< 0.005	0.45
Onsite truck		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.02	0.01	0.01	0.12	0	0	< 0.005	< 0.005		0	0	0	17.6	17.6	< 0.005	< 0.005	0.08	17.9
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005		0	0	0	0.34	0.34	< 0.005	< 0.005	< 0.005	0.34
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005		0	0	0	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e	
Daily, Summer (Max)																			
Elementary School		0.59	0.56	0.46	2.71	< 0.005	0.01	0.03	0.03	0.01	0.01	0.01		435	435	0.04	0.03	1.92	447
Parking Lot		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Other Non-Asphalt Surfaces		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Total		0.59	0.56	0.46	2.71	< 0.005	0.01	0.03	0.03	0.01	0.01	0.01		435	435	0.04	0.03	1.92	447
Daily, Winter (Max)																			
Elementary School		0.6	0.57	0.51	3.09	< 0.005	0.01	0.03	0.03	0.01	0.01	0.01		435	435	0.04	0.03	0.05	446
Parking Lot		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Other Non-Asphalt Surfaces		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Total		0.6	0.57	0.51	3.09	< 0.005	0.01	0.03	0.03	0.01	0.01	0.01		435	435	0.04	0.03	0.05	446
Annual																			
Elementary School		0.08	0.07	0.06	0.38	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		51.5	51.5	< 0.005	< 0.005	0.1	52.8
Parking Lot		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Other Non-Asphalt Surfaces		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Total		0.08	0.07	0.06	0.38	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		51.5	51.5	< 0.005	< 0.005	0.1	52.8

4.1.2. Mitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e	
Daily, Summer (Max)																			
Elementary School		0.59	0.56	0.46	2.71	< 0.005	0.01	0.03	0.03	0.01	0.01	0.01		435	435	0.04	0.03	1.92	447
Parking Lot		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Other Non-Asphalt Surfaces		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Total		0.59	0.56	0.46	2.71	< 0.005	0.01	0.03	0.03	0.01	0.01	0.01		435	435	0.04	0.03	1.92	447
Daily, Winter (Max)																			
Elementary School		0.6	0.57	0.51	3.09	< 0.005	0.01	0.03	0.03	0.01	0.01	0.01		435	435	0.04	0.03	0.05	446
Parking Lot		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Other Non-Asphalt Surfaces		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Total		0.6	0.57	0.51	3.09	< 0.005	0.01	0.03	0.03	0.01	0.01	0.01		435	435	0.04	0.03	0.05	446
Annual																			
Elementary School		0.08	0.07	0.06	0.38	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		51.5	51.5	< 0.005	< 0.005	0.1	52.8
Parking Lot		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Other Non-Asphalt Surfaces		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Total		0.08	0.07	0.06	0.38	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		51.5	51.5	< 0.005	< 0.005	0.1	52.8

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Land Use	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Elementary School			43.9	43.9	0.01 < 0.005		44.4
Parking Lot			2.22	2.22 < 0.005	< 0.005		2.25
Other Non-Asphalt Surfaces			0	0	0	0	0
Total			46.2	46.2	0.01 < 0.005		46.6
Daily, Winter (Max)							
Elementary School			43.9	43.9	0.01 < 0.005		44.4
Parking Lot			2.22	2.22 < 0.005	< 0.005		2.25
Other Non-Asphalt Surfaces			0	0	0	0	0
Total			46.2	46.2	0.01 < 0.005		46.6
Annual							
Elementary School			7.28	7.28 < 0.005	< 0.005		7.35
Parking Lot			0.37	0.37 < 0.005	< 0.005		0.37
Other Non-Asphalt Surfaces			0	0	0	0	0
Total			7.64	7.64 < 0.005	< 0.005		7.72

4.2.2. Electricity Emissions By Land Use - Mitigated

Land Use	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Elementary School			43.9	43.9	0.01 < 0.005		44.4
Parking Lot			2.22	2.22 < 0.005	< 0.005		2.25
Other Non-Asphalt Surfaces			0	0	0	0	0
Total			46.2	46.2	0.01 < 0.005		46.6
Daily, Winter (Max)							
Elementary School			43.9	43.9	0.01 < 0.005		44.4
Parking Lot			2.22	2.22 < 0.005	< 0.005		2.25
Other Non-Asphalt Surfaces			0	0	0	0	0
Total			46.2	46.2	0.01 < 0.005		46.6
Annual							
Elementary School			7.28	7.28 < 0.005	< 0.005		7.35
Parking Lot			0.37	0.37 < 0.005	< 0.005		0.37
Other Non-Asphalt Surfaces			0	0	0	0	0
Total			7.64	7.64 < 0.005	< 0.005		7.72

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Elementary School		0.02	0.01	0.21	0.17 < 0.005		0.02		0.02	0.02		0.02		246	246	0.02 < 0.005		246
Parking Lot		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Other Non-Asphalt Surfaces		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Total		0.02	0.01	0.21	0.17 < 0.005		0.02		0.02	0.02		0.02		246	246	0.02 < 0.005		246
Daily, Winter (Max)																		
Elementary School		0.02	0.01	0.21	0.17 < 0.005		0.02		0.02	0.02		0.02		246	246	0.02 < 0.005		246
Parking Lot		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Other Non-Asphalt Surfaces		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Total		0.02	0.01	0.21	0.17 < 0.005		0.02		0.02	0.02		0.02		246	246	0.02 < 0.005		246
Annual																		
Elementary School	< 0.005	< 0.005		0.04	0.03 < 0.005	< 0.005		< 0.005	< 0.005		< 0.005			40.7	40.7	< 0.005	< 0.005		40.8
Parking Lot		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Other Non-Asphalt Surfaces		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Total	< 0.005	< 0.005		0.04	0.03 < 0.005	< 0.005		< 0.005	< 0.005		< 0.005			40.7	40.7	< 0.005	< 0.005		40.8

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Elementary School		0.02	0.01	0.21	0.17 < 0.005		0.02		0.02	0.02		0.02		246	246	0.02 < 0.005		246
Parking Lot		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Other Non-Asphalt Surfaces		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Total		0.02	0.01	0.21	0.17 < 0.005		0.02		0.02	0.02		0.02		246	246	0.02 < 0.005		246
Daily, Winter (Max)																		
Elementary School		0.02	0.01	0.21	0.17 < 0.005		0.02		0.02	0.02		0.02		246	246	0.02 < 0.005		246
Parking Lot		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Other Non-Asphalt Surfaces		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Total		0.02	0.01	0.21	0.17 < 0.005		0.02		0.02	0.02		0.02		246	246	0.02 < 0.005		246
Annual																		
Elementary School	< 0.005	< 0.005		0.04	0.03 < 0.005	< 0.005		< 0.005	< 0.005		< 0.005			40.7	40.7	< 0.005	< 0.005		40.8
Parking Lot		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Other Non-Asphalt Surfaces		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Total	< 0.005	< 0.005		0.04	0.03 < 0.005	< 0.005		< 0.005	< 0.005		< 0.005			40.7	40.7	< 0.005	< 0.005		40.8

4.3. Area Emissions by Source

4.3.2. Unmitigated

Source	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Consumer Products			0.38															
Architectural Coatings			0.11															
Landscape Equipment		0.34	0.32	0.02	1.93 < 0.005	< 0.005		< 0.005	< 0.005		< 0.005			7.95	7.95	< 0.005	< 0.005		7.97
Total		0.34	0.8	0.02	1.93 < 0.005	< 0.005		< 0.005	< 0.005		< 0.005			7.95	7.95	< 0.005	< 0.005		7.97
Daily, Winter (Max)																		
Consumer Products			0.38															
Architectural Coatings			0.11															
Total			0.49															
Annual																		
Consumer Products			0.07															
Architectural Coatings			0.02															
Landscape Equipment		0.03	0.03	< 0.005	0.17 < 0.005	< 0.005		< 0.005	< 0.005		< 0.005			0.65	0.65	< 0.005	< 0.005		0.65
Total		0.03	0.12	< 0.005	0.17 < 0.005	< 0.005		< 0.005	< 0.005		< 0.005			0.65	0.65	< 0.005	< 0.005		0.65

4.3.1. Mitigated

Source	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Consumer Products			0.38															
Architectural Coatings			0.11															
Landscape Equipment		0.34	0.32	0.02	1.93 < 0.005	< 0.005		< 0.005	< 0.005		< 0.005			7.95	7.95	< 0.005	< 0.005		7.97
Total		0.34	0.8	0.02	1.93 < 0.005	< 0.005		< 0.005	< 0.005		< 0.005			7.95	7.95	< 0.005	< 0.005		7.97
Daily, Winter (Max)																		
Consumer Products			0.38															
Architectural Coatings			0.11															
Total			0.49															
Annual																		
Consumer Products			0.07															
Architectural Coatings			0.02															
Landscape Equipment		0.03	0.03	< 0.005	0.17 < 0.005	< 0.005		< 0.005	< 0.005		< 0.005			0.65	0.65	< 0.005	< 0.005		0.65
Total		0.03	0.12	< 0.005	0.17 < 0.005	< 0.005		< 0.005	< 0.005		< 0.005			0.65	0.65	< 0.005	< 0.005		0.65

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Land Use	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Elementary School		0.23	0.3	0.53	0.02 < 0.005		1.3
Parking Lot		0	0	0	0	0	0
Other Non-Asphalt Surfaces		0	0.09	0.09 < 0.005	< 0.005		0.09
Total		0.23	0.39	0.62	0.02 < 0.005		1.39
Daily, Winter (Max)							
Elementary School		0.23	0.3	0.53	0.02 < 0.005		1.3
Parking Lot		0	0	0	0	0	0
Other Non-Asphalt Surfaces		0	0.09	0.09 < 0.005	< 0.005		0.09
Total		0.23	0.39	0.62	0.02 < 0.005		1.39
Annual							
Elementary School		0.04	0.05	0.09 < 0.005	< 0.005		0.22
Parking Lot		0	0	0	0	0	0
Other Non-Asphalt Surfaces		0	0.01	0.01 < 0.005	< 0.005		0.01
Total		0.04	0.06	0.1 < 0.005	< 0.005		0.23

4.4.1. Mitigated

Land Use	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Elementary School		0.23	0.3	0.53	0.02 < 0.005		1.3
Parking Lot		0	0	0	0	0	0
Other Non-Asphalt Surfaces		0	0.09	0.09 < 0.005	< 0.005		0.09
Total		0.23	0.39	0.62	0.02 < 0.005		1.39
Daily, Winter (Max)							
Elementary School		0.23	0.3	0.53	0.02 < 0.005		1.3
Parking Lot		0	0	0	0	0	0
Other Non-Asphalt Surfaces		0	0.09	0.09 < 0.005	< 0.005		0.09
Total		0.23	0.39	0.62	0.02 < 0.005		1.39
Annual							
Elementary School		0.04	0.05	0.09 < 0.005	< 0.005		0.22
Parking Lot		0	0	0	0	0	0
Other Non-Asphalt Surfaces		0	0.01	0.01 < 0.005	< 0.005		0.01
Total		0.04	0.06	0.1 < 0.005	< 0.005		0.23

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Land Use	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Elementary School	12.2	0	12.2	1.22	0		42.8
Parking Lot	0	0	0	0	0		0
Other Non-Asphalt Surfaces	0	0	0	0	0		0
Total	12.2	0	12.2	1.22	0		42.8
Daily, Winter (Max)							
Elementary School	12.2	0	12.2	1.22	0		42.8
Parking Lot	0	0	0	0	0		0
Other Non-Asphalt Surfaces	0	0	0	0	0		0
Total	12.2	0	12.2	1.22	0		42.8
Annual							
Elementary School	2.02	0	2.02	0.2	0		7.08
Parking Lot	0	0	0	0	0		0
Other Non-Asphalt Surfaces	0	0	0	0	0		0
Total	2.02	0	2.02	0.2	0		7.08

4.5.1. Mitigated

Land Use	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Elementary School	12.2	0	12.2	1.22	0		42.8
Parking Lot	0	0	0	0	0		0
Other Non-Asphalt Surfaces	0	0	0	0	0		0
Total	12.2	0	12.2	1.22	0		42.8
Daily, Winter (Max)							
Elementary School	12.2	0	12.2	1.22	0		42.8
Parking Lot	0	0	0	0	0		0
Other Non-Asphalt Surfaces	0	0	0	0	0		0
Total	12.2	0	12.2	1.22	0		42.8
Annual							
Elementary School	2.02	0	2.02	0.2	0		7.08
Parking Lot	0	0	0	0	0		0
Other Non-Asphalt Surfaces	0	0	0	0	0		0
Total	2.02	0	2.02	0.2	0		7.08

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Land Use	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Elementary School						0.07	0.07
Total						0.07	0.07
Daily, Winter (Max)							
Elementary School						0.07	0.07
Total						0.07	0.07
Annual							
Elementary School						0.01	0.01
Total						0.01	0.01

4.6.2. Mitigated

Land Use	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Elementary School						0.07	0.07
Total						0.07	0.07
Daily, Winter (Max)							
Elementary School						0.07	0.07
Total						0.07	0.07
Annual							
Elementary School						0.01	0.01
Total						0.01	0.01

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Equipment Type	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Total							
Daily, Winter (Max)							
Total							
Annual							
Total							

4.7.2. Mitigated

Equipment Type	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Total							
Daily, Winter (Max)							
Total							
Annual							
Total							

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Equipment Type	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Total							
Daily, Winter (Max)							
Total							
Annual							
Total							

4.8.2. Mitigated

Equipment Type	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Total							
Daily, Winter (Max)							
Total							
Annual							
Total							

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Equipment Type	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Total							
Daily, Winter (Max)							
Total							
Annual							
Total							

4.9.2. Mitigated

Equipment Type	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Total							
Daily, Winter (Max)							
Total							
Annual							
Total							

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Vegetation	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Total							
Daily, Winter (Max)							
Total							
Annual							
Total							

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Land Use	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Total							
Daily, Winter (Max)							
Total							
Annual							
Total							

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Species	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Avoided							
Subtotal							
Sequestered							
Subtotal							
Removed							
Subtotal							

Daily, Winter (Max)
Avoided
Subtotal
Sequestered
Subtotal
Removed
Subtotal

Annual
Avoided
Subtotal
Sequestered
Subtotal
Removed
Subtotal

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Vegetation	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Total							
Daily, Winter (Max)							
Total							
Annual							
Total							

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Land Use	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Total							
Daily, Winter (Max)							
Total							
Annual							
Total							

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Species	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)							
Avoided							
Subtotal							
Sequestered							
Subtotal							
Removed							
Subtotal							

Daily, Winter (Max)
Avoided
Subtotal
Sequestered
Subtotal
Removed
Subtotal

Annual
Avoided
Subtotal
Sequestered
Subtotal
Removed
Subtotal

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Pl	Phase Description
Building Demolition	Demolition	45444	45454	5	7	
Building Demolition Debris Haul	Demolition	45444	45454	5	7	
Site Preparation	Site Preparation	45444	45448	5	3	
Site Preparation Soil Haul	Site Preparation	45444	45448	5	3	
Grading	Grading	45448	45454	5	5	
Building Construction	Building Constru	45462	45811	5	250	
Paving	Paving	45793	45811	5	13	
Architectural Coating	Architectural Co	45793	45811	5	13	
Utility Trenching	Trenching	45454	45462	5	7	
Finishing/Landscaping	Trenching	45803	45811	5	7	

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1	8	148	0.41
Site Preparation	Rubber Tired Do	Diesel	Average	1	7	367	0.4
Site Preparation	Tractors/Loader:	Diesel	Average	1	8	84	0.37
Site Preparation Soil Haul	Graders	Diesel	Average	0	8	148	0.41
Site Preparation Soil Haul	Rubber Tired Do	Diesel	Average	0	7	367	0.4
Site Preparation Soil Haul	Tractors/Loader:	Diesel	Average	0	8	84	0.37
Grading	Graders	Diesel	Average	1	8	148	0.41
Grading	Rubber Tired Do	Diesel	Average	1	8	367	0.4
Grading	Tractors/Loader:	Diesel	Average	2	7	84	0.37
Building Construction	Cranes	Diesel	Average	1	6	367	0.29
Building Construction	Forklifts	Diesel	Average	1	6	82	0.2
Building Construction	Generator Sets	Diesel	Average	1	8	14	0.74
Building Construction	Tractors/Loader:	Diesel	Average	1	6	84	0.37
Building Construction	Welders	Diesel	Average	3	8	46	0.45
Paving	Cement and Mor	Diesel	Average	1	6	10	0.56
Paving	Pavers	Diesel	Average	1	6	81	0.42
Paving	Paving Equipmer	Diesel	Average	1	8	89	0.36
Paving	Rollers	Diesel	Average	1	7	36	0.38
Paving	Tractors/Loader:	Diesel	Average	1	8	84	0.37
Architectural Coating	Air Compressors	Diesel	Average	1	6	37	0.48
Building Demolition	Concrete/Indust	Diesel	Average	1	8	33	0.73
Building Demolition	Rubber Tired Do	Diesel	Average	1	8	367	0.4
Building Demolition	Tractors/Loader:	Diesel	Average	3	8	84	0.37
Building Demolition Debris Haul	Concrete/Indust	Diesel	Average	0	8	33	0.73
Building Demolition Debris Haul	Rubber Tired Do	Diesel	Average	0	8	367	0.4
Building Demolition Debris Haul	Tractors/Loader:	Diesel	Average	0	8	84	0.37
Utility Trenching	Excavators	Diesel	Average	1	8	36	0.38
Finishing/Landscaping	Excavators	Diesel	Average	1	8	36	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1	8	148	0.41
Site Preparation	Rubber Tired Do	Diesel	Average	1	7	367	0.4
Site Preparation	Tractors/Loader:	Diesel	Average	1	8	84	0.37
Site Preparation Soil Haul	Graders	Diesel	Average	0	8	148	0.41
Site Preparation Soil Haul	Rubber Tired Do	Diesel	Average	0	7	367	0.4
Site Preparation Soil Haul	Tractors/Loader:	Diesel	Average	0	8	84	0.37
Grading	Graders	Diesel	Average	1	8	148	0.41
Grading	Rubber Tired Do	Diesel	Average	1	8	367	0.4
Grading	Tractors/Loader:	Diesel	Average	2	7	84	0.37
Building Construction	Cranes	Diesel	Average	1	6	367	0.29
Building Construction	Forklifts	Diesel	Average	1	6	82	0.2
Building Construction	Generator Sets	Diesel	Average	1	8	14	0.74
Building Construction	Tractors/Loader:	Diesel	Average	1	6	84	0.37
Building Construction	Welders	Diesel	Average	3	8	46	0.45
Paving	Cement and Mor	Diesel	Average	1	6	10	0.56
Paving	Pavers	Diesel	Average	1	6	81	0.42
Paving	Paving Equipmer	Diesel	Average	1	8	89	0.36
Paving	Rollers	Diesel	Average	1	7	36	0.38
Paving	Tractors/Loader:	Diesel	Average	1	8	84	0.37
Architectural Coating	Air Compressors	Diesel	Average	1	6	37	0.48
Building Demolition	Concrete/Indust	Diesel	Average	1	8	33	0.73
Building Demolition	Rubber Tired Do	Diesel	Average	1	8	367	0.4
Building Demolition	Tractors/Loader:	Diesel	Average	3	8	84	0.37
Building Demolition Debris Haul	Concrete/Indust	Diesel	Average	0	8	33	0.73
Building Demolition Debris Haul	Rubber Tired Do	Diesel	Average	0	8	367	0.4
Building Demolition Debris Haul	Tractors/Loader:	Diesel	Average	0	8	84	0.37
Utility Trenching	Excavators	Diesel	Average	1	8	36	0.38
Finishing/Landscaping	Excavators	Diesel	Average	1	8	36	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips p	Miles per Trip	Vehicle Mix
Site Preparation				
Site Preparation	Worker	7.5	9.53	LDA,LDT1,LDT2
Site Preparation	Vendor	8	7.16	HHDT,MHDT
Site Preparation	Hauling	0	20	HHDT
Site Preparation	Onsite truck	0		HHDT
Site Preparation Soil Haul				
Site Preparation Soil Haul	Worker	0	9.53	LDA,LDT1,LDT2
Site Preparation Soil Haul	Vendor	0	7.16	HHDT,MHDT
Site Preparation Soil Haul	Hauling	62.7	20	HHDT
Site Preparation Soil Haul	Onsite truck	0		HHDT
Grading				
Grading	Worker	10	9.53	LDA,LDT1,LDT2
Grading	Vendor	10	7.16	HHDT,MHDT
Grading	Hauling	0	20	HHDT
Grading	Onsite truck	0		HHDT
Building Construction				
Building Construction	Worker	18.7	9.53	LDA,LDT1,LDT2
Building Construction	Vendor	7.28	7.16	HHDT,MHDT
Building Construction	Hauling	0	20	HHDT
Building Construction	Onsite truck	0		HHDT
Paving				
Paving	Worker	12.5	9.53	LDA,LDT1,LDT2
Paving	Vendor	0	7.16	HHDT,MHDT
Paving	Hauling	0	20	HHDT
Paving	Onsite truck	0		HHDT
Architectural Coating				
Architectural Coating	Worker	3.73	9.53	LDA,LDT1,LDT2
Architectural Coating	Vendor	0	7.16	HHDT,MHDT
Architectural Coating	Hauling	0	20	HHDT
Architectural Coating	Onsite truck	0		HHDT
Utility Trenching				
Utility Trenching	Worker	2.5	9.53	LDA,LDT1,LDT2
Utility Trenching	Vendor	0	7.16	HHDT,MHDT
Utility Trenching	Hauling	0	20	HHDT
Utility Trenching	Onsite truck	0		HHDT
Finishing/Landscaping				
Finishing/Landscaping	Worker	2.5	9.53	LDA,LDT1,LDT2
Finishing/Landscaping	Vendor	0	7.16	HHDT,MHDT
Finishing/Landscaping	Hauling	0	20	HHDT
Finishing/Landscaping	Onsite truck	0		HHDT
Building Demolition				
Building Demolition	Worker	12.5	9.53	LDA,LDT1,LDT2
Building Demolition	Vendor	10	7.16	HHDT,MHDT
Building Demolition	Hauling	0	20	HHDT
Building Demolition	Onsite truck	0		HHDT
Building Demolition Debris Haul				
Building Demolition Debris Haul	Worker	0	9.53	LDA,LDT1,LDT2
Building Demolition Debris Haul	Vendor	0	7.16	HHDT,MHDT
Building Demolition Debris Haul	Hauling	6	20	HHDT
Building Demolition Debris Haul	Onsite truck	0		HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips p	Miles per Trip	Vehicle Mix
Site Preparation				
Site Preparation	Worker	7.5	9.53	LDA,LDT1,LDT2
Site Preparation	Vendor	8	7.16	HHDT,MHDT
Site Preparation	Hauling	0	20	HHDT
Site Preparation	Onsite truck	0		HHDT
Site Preparation Soil Haul				
Site Preparation Soil Haul	Worker	0	9.53	LDA,LDT1,LDT2
Site Preparation Soil Haul	Vendor	0	7.16	HHDT,MHDT
Site Preparation Soil Haul	Hauling	62.7	20	HHDT
Site Preparation Soil Haul	Onsite truck	0		HHDT
Grading				
Grading	Worker	10	9.53	LDA,LDT1,LDT2
Grading	Vendor	10	7.16	HHDT,MHDT
Grading	Hauling	0	20	HHDT
Grading	Onsite truck	0		HHDT
Building Construction				
Building Construction	Worker	18.7	9.53	LDA,LDT1,LDT2
Building Construction	Vendor	7.28	7.16	HHDT,MHDT
Building Construction	Hauling	0	20	HHDT
Building Construction	Onsite truck	0		HHDT
Paving				
Paving	Worker	12.5	9.53	LDA,LDT1,LDT2
Paving	Vendor	0	7.16	HHDT,MHDT
Paving	Hauling	0	20	HHDT
Paving	Onsite truck	0		HHDT
Architectural Coating				
Architectural Coating	Worker	3.73	9.53	LDA,LDT1,LDT2
Architectural Coating	Vendor	0	7.16	HHDT,MHDT
Architectural Coating	Hauling	0	20	HHDT
Architectural Coating	Onsite truck	0		HHDT
Utility Trenching				
Utility Trenching	Worker	2.5	9.53	LDA,LDT1,LDT2
Utility Trenching	Vendor	0	7.16	HHDT,MHDT
Utility Trenching	Hauling	0	20	HHDT
Utility Trenching	Onsite truck	0		HHDT
Finishing/Landscaping				
Finishing/Landscaping	Worker	2.5	9.53	LDA,LDT1,LDT2
Finishing/Landscaping	Vendor	0	7.16	HHDT,MHDT
Finishing/Landscaping	Hauling	0	20	HHDT
Finishing/Landscaping	Onsite truck	0		HHDT
Building Demolition				
Building Demolition	Worker	12.5	9.53	LDA,LDT1,LDT2
Building Demolition	Vendor	10	7.16	HHDT,MHDT
Building Demolition	Hauling	0	20	HHDT
Building Demolition	Onsite truck	0		HHDT
Building Demolition Debris Haul				
Building Demolition Debris Haul	Worker	0	9.53	LDA,LDT1,LDT2
Building Demolition Debris Haul	Vendor	0	7.16	HHDT,MHDT
Building Demolition Debris Haul	Hauling	6	20	HHDT
Building Demolition Debris Haul	Onsite truck	0		HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

	PM10	PM2.5
Control Strategies Applied	Reduction	Reduction

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	0	26184	8728	273

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)
Building Demolition	0	0	0	0	
Building Demolition Debris Haul	0	0	0	414	
Site Preparation	0	0	2.81	0	
Site Preparation Soil Haul	0	1500	2.81	0	
Grading	0	0	5	0	
Paving	0	0	0	0	0.62

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per c	PM10 Reduction	PM2.5 Reduction

5.7. Construction Paving

Land Use	Area Paved (acre	% Asphalt
Elementary School	0	0
Parking Lot	0.1	100
Other Non-Asphalt Surfaces	0.14	0
Other Non-Asphalt Surfaces	0.22	0
Other Non-Asphalt Surfaces	0.15	0

5.8. Construction Electricity Consumption and Emissions Factors

Year	kWh per Year	CO2	CH4	N2O
2024	0	204	0.03	< 0.005
2025	0	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Elementary School	113	0	0	29445	485	0	0	126520
Parking Lot	0	0	0	0	0	0	0	0
Other Non-Asphalt Surfaces	0	0	0	0	0	0	0	0
Other Non-Asphalt Surfaces	0	0	0	0	0	0	0	0
Other Non-Asphalt Surfaces	0	0	0	0	0	0	0	0

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Elementary School	113	0	0	29445	485	0	0	126520
Parking Lot	0	0	0	0	0	0	0	0
Other Non-Asphalt Surfaces	0	0	0	0	0	0	0	0
Other Non-Asphalt Surfaces	0	0	0	0	0	0	0	0
Other Non-Asphalt Surfaces	0	0	0	0	0	0	0	0

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exter	Non-Residential	Non-Residential	Parking Area Coated (sq ft)
0	0	26184	8728	273

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Land Use	Electricity (kWh/	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Elementary School	78629	204	0.033	0.004	766152
Parking Lot	3981	204	0.033	0.004	0
Other Non-Asphalt Surfaces	0	204	0.033	0.004	0
Other Non-Asphalt Surfaces	0	204	0.033	0.004	0
Other Non-Asphalt Surfaces	0	204	0.033	0.004	0

5.11.2. Mitigated

Land Use	Electricity (kWh/	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Elementary School	78629	204	0.033	0.004	766152
Parking Lot	3981	204	0.033	0.004	0
Other Non-Asphalt Surfaces	0	204	0.033	0.004	0
Other Non-Asphalt Surfaces	0	204	0.033	0.004	0
Other Non-Asphalt Surfaces	0	204	0.033	0.004	0

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (g	Outdoor Water (gal/year)
Elementary School	121212	0
Parking Lot	0	0
Other Non-Asphalt Surfaces	0	53393
Other Non-Asphalt Surfaces	0	0
Other Non-Asphalt Surfaces	0	0

5.12.2. Mitigated

Land Use	Indoor Water (g	Outdoor Water (gal/year)
Elementary School	121212	0
Parking Lot	0	0
Other Non-Asphalt Surfaces	0	53393
Other Non-Asphalt Surfaces	0	0
Other Non-Asphalt Surfaces	0	0

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year	Cogeneration (kWh/year)
Elementary School	22.7	0
Parking Lot	0	0
Other Non-Asphalt Surfaces	0	0
Other Non-Asphalt Surfaces	0	0
Other Non-Asphalt Surfaces	0	0

5.13.2. Mitigated

Land Use	Waste (ton/year	Cogeneration (kWh/year)
Elementary School	22.7	0
Parking Lot	0	0
Other Non-Asphalt Surfaces	0	0
Other Non-Asphalt Surfaces	0	0
Other Non-Asphalt Surfaces	0	0

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak	Service Leak Rate	Times Serviced
Elementary School	Household refrig	R-134a	1430	0.02	0.6	0	1
Elementary School	Other commerci	R-410A	2088	< 0.005	4	4	18
Elementary School	Stand-alone reta	R-134a	1430	< 0.005	1	0	1
Elementary School	Walk-in refrigerı	R-404A	3922	< 0.005	7.5	7.5	20

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak	Service Leak Rate	Times Serviced
Elementary School	Household refrig	R-134a	1430	0.02	0.6	0	1
Elementary School	Other commerci	R-410A	2088	< 0.005	4	4	18
Elementary School	Stand-alone reta	R-134a	1430	< 0.005	1	0	1
Elementary School	Walk-in refrigerı	R-404A	3922	< 0.005	7.5	7.5	20

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.15.2. Mitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MI	Daily Heat Input	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil T	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil T	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	normalized constructions schedule based on information from District
Construction: Off-Road Equipment	additional excavator added for utilities trenching and finishing/landscaping based on information from similar projects.
Construction: Trips and VMT	see water truck calcs in assumptions file.
Construction: Dust From Material Movemer	based on export information from District
Construction: Architectural Coatings	based on sqft of high school buildings, considers parking area only
Operations: Vehicle Data	ITE Trip Generation Manual 11th Ed. default trips were used to calculate the increase in student capacity by 50 students
Operations: Architectural Coatings	based on sqft of high school buildings, considers parking area only
Operations: Water and Waste Water	indoor water based on caleemod default indoor water use for 50 additional students
Operations: Solid Waste	See Section 3.19, Utilities and Service Systems. The proposed project would not increase overall District enrollment and would not generate solid waste beyond what is currently produced.
Characteristics: Project Details	a
Characteristics: Utility Information	
Construction: Electricity	Redwood Coast Energy Authority Carbon Intensity Factors
Land Use	based on the information provided by the applicant

CalEEMod Mitigated Construction Model

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Glen Paul High School Mitigated Construction
Lead Agency	
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.9
Precipitation (days)	77
Location	2501 Cypress Ave, Eureka, CA 95503, USA
County	Humboldt
City	Unincorporated
Air District	North Coast Unified APCD
Air Basin	North Coast
TAZ	106
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
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
Elementary School	17.5	1000sqft	0.4	17456	0	0		
Parking Lot	4.54	1000sqft	0.1	4544	0	0		
Other Non-Asphalt Surfaces	6.3	1000sqft	0.14	6296	6296	0		
Other Non-Asphalt Surfaces	9.74	1000sqft	0.22	9740	0	0		
Other Non-Asphalt Surfaces	6.39	1000sqft	0.15	6395	0	0		

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-12	Sweep Paved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Un/Mit.	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Unmit.		5.97	5.01	53.4	47.4	0.13	2.16	16.3	18.4	2	7.07	9.07		12944	12944	0.34	0.97	12.6	13254
Mit.		1.3	1.23	31.2	43.7	0.13	0.28	8.12	8.41	0.28	3.15	3.43		12944	12944	0.34	0.97	12.6	13254
% Reduced		78.3	75.5	41.6	7.8		86.9	50.1	54.4	86.1	55.5	62.2							
Average Daily (Max)																			
Unmit.		0.09	0.07	0.73	0.69	< 0.005	0.03	0.19	0.22	0.03	0.08	0.11		160	160	< 0.005	0.01	0.06	163
Mit.		0.02	0.02	0.43	0.63	< 0.005	< 0.005	0.1	0.1	< 0.005	0.04	0.04		160	160	< 0.005	0.01	0.06	163
% Reduced		78.5	75.5	40.8	7.78		85.3	47.8	52.9	84.6	54.7	62.4							
Annual (Max)																			
Unmit.		0.02	0.01	0.13	0.13	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02		26.5	26.5	< 0.005	< 0.005	0.01	27.1
Mit.	< 0.005	< 0.005	0.08	0.12	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	0.01		26.5	26.5	< 0.005	< 0.005	0.01	27.1
% Reduced		78.5	75.5	40.8	7.78		85.3	47.8	52.9	84.6	54.7	62.4							

2.2. Construction Emissions by Year, Unmitigated

Year	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily - Summer (Max)																		
2024		5.97	5.01	53.4	47.4	0.13	2.16	16.3	18.4	2	7.07	9.07		12944	12944	0.34	0.97	12.6	13254
Daily - Winter (Max)																			
Average Daily																			
2024		0.09	0.07	0.73	0.69	< 0.005	0.03	0.19	0.22	0.03	0.08	0.11		160	160	< 0.005	0.01	0.06	163
2025													NaN	NaN	NaN	NaN		NaN	
Annual																			
2024		0.02	0.01	0.13	0.13	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02		26.5	26.5	< 0.005	< 0.005	0.01	27.1
2025													NaN	NaN	NaN	NaN		NaN	

2.3. Construction Emissions by Year, Mitigated

Year	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily - Summer (Max)																		
2024		1.3	1.23	31.2	43.7	0.13	0.28	8.12	8.41	0.28	3.15	3.43		12944	12944	0.34	0.97	12.6	13254
Daily - Winter (Max)																			
Average Daily																			
2024		0.02	0.02	0.43	0.63	< 0.005	< 0.005	0.1	0.1	< 0.005	0.04	0.04		160	160	< 0.005	0.01	0.06	163
2025													NaN	NaN	NaN	NaN		NaN	
Annual																			
2024	< 0.005	< 0.005	0.08	0.12	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01			26.5	26.5	< 0.005	< 0.005	0.01	27.1
2025													NaN	NaN	NaN	NaN		NaN	

3. Construction Emissions Details

3.2. Demolition (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0.33	0.33	8.81	14.6	0.02	0.1		0.1	0.09		0.09		2494	2494	0.1	0.02		2502
Demolition								0	0		0	0							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																			
Average Daily																			
Off-Road Equipment		0.01	0.01	0.17	0.28	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		47.8	47.8	< 0.005	< 0.005		48
Demolition								0	0		0	0							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																			
Off-Road Equipment	< 0.005	< 0.005		0.03	0.05	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		7.92	7.92	< 0.005	< 0.005		7.94
Demolition								0	0		0	0							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Offsite																			
Daily, Summer (Max)																			
Worker		0.08	0.07	0.06	0.65	0	0	0.01	0.01	0	0	0		89.5	89.5	0.01	< 0.005	0.43	91.2
Vendor		0.01	0.01	0.37	0.13	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01		238	238	< 0.005	0.03	0.61	249
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																			
Average Daily																			
Worker	< 0.005	< 0.005	< 0.005		0.01		0	< 0.005	< 0.005		0	0		1.72	1.72	< 0.005	< 0.005	< 0.005	1.75
Vendor	< 0.005	< 0.005		0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		4.56	4.56	< 0.005	< 0.005	0.01	4.76
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																			
Worker	< 0.005	< 0.005	< 0.005	< 0.005		0	0	< 0.005	< 0.005		0	0		0.28	0.28	< 0.005	< 0.005	< 0.005	0.29
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.75	0.75	< 0.005	< 0.005	< 0.005	0.79
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0

3.4. Demolition (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0	0		0
Demolition								1.29	1.29		0.2	0.2							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																			
Average Daily																			
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0	0		0
Demolition								0.02	0.02		< 0.005	< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																			
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0	0		0
Demolition								< 0.005	< 0.005		< 0.005	< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Offsite																			
Daily, Summer (Max)																			
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		0.01	0.01	0.62	0.1	0.01	0.01	0.03	0.04	0.01	0.01	0.02		442	442	< 0.005	0.07	0.86	463
Daily, Winter (Max)																			
Average Daily																			
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling	< 0.005	< 0.005		0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			8.47	8.47	< 0.005	< 0.005	0.01	8.88
Annual																			
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			1.4	1.4	< 0.005	< 0.005	< 0.005	1.47

3.6. Site Preparation (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0.27	0.27	6.4	11.9	0.02	0.04		0.04	0.04		0.04		2064	2064	0.08	0.02		2071
Dust From Material Movement								2.44	2.44		1.17	1.17							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																			
Average Daily																			
Off-Road Equipment	< 0.005	< 0.005		0.05	0.1	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		17	17	< 0.005	< 0.005		17
Dust From Material Movement								0.02	0.02		0.01	0.01							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																			
Off-Road Equipment	< 0.005	< 0.005		0.01	0.02	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		2.81	2.81	< 0.005	< 0.005		2.82
Dust From Material Movement								< 0.005	< 0.005		< 0.005	< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Offsite																			
Daily, Summer (Max)																			
Worker		0.05	0.04	0.04	0.39	0	0	< 0.005	< 0.005	0	0	0		53.7	53.7	< 0.005	< 0.005	0.26	54.7
Vendor		0.01	0.01	0.3	0.1	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01		190	190	< 0.005	0.03	0.49	199
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																			
Average Daily																			
Worker	< 0.005	< 0.005	< 0.005	< 0.005		0	0	< 0.005	< 0.005		0	0		0.44	0.44	< 0.005	< 0.005	< 0.005	0.45
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		1.56	1.56	< 0.005	< 0.005	< 0.005	1.63
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																			
Worker	< 0.005	< 0.005	< 0.005	< 0.005		0	0	< 0.005	< 0.005		0	0		0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.26	0.26	< 0.005	< 0.005	< 0.005	0.27
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0

3.8. Site Preparation (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_x	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Dust From Material Movement								0.01	0.01	< 0.005	< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Dust From Material Movement								< 0.005	< 0.005	< 0.005	< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Annual																		
Off-Road Equipment		0	0	0	0	0	0		0	0		0		0	0	0	0	0
Dust From Material Movement								< 0.005	< 0.005	< 0.005	< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Hauling		0.14	0.1	6.48	0.99	0.06	0.08	0.3	0.39	0.08	0.11	0.19		4611	4611	0.03	0.73	9.01	4840
Daily, Winter (Max)																		
Average Daily																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		37.9	37.9	< 0.005	0.01	0.03	39.7
Annual																		
Worker		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		6.28	6.28	< 0.005	< 0.005	0.01	6.58

3.10. Grading (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0.32	0.32	7.7	14.2	0.02	0.05		0.05	0.05		0.05		2454	2454	0.1	0.02		2462
Dust From Material Movement								2.76	2.76		1.34	1.34							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		< 0.005	< 0.005	0.11	0.2	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		33.6	33.6	< 0.005	< 0.005		33.7
Dust From Material Movement								0.04	0.04		0.02	0.02							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																		
Off-Road Equipment		< 0.005	< 0.005	0.02	0.04	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		5.56	5.56	< 0.005	< 0.005		5.58
Dust From Material Movement								0.01	0.01	< 0.005		< 0.005							
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.06	0.06	0.05	0.52	0	0	< 0.005	< 0.005	0	0	0		71.6	71.6	< 0.005	< 0.005	0.34	73
Vendor		0.01	0.01	0.37	0.13	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01		238	238	< 0.005	0.03	0.61	249
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker		< 0.005	< 0.005	< 0.005	0.01	0	0	< 0.005	< 0.005	0	0	0		0.98	0.98	< 0.005	< 0.005	< 0.005	1
Vendor		< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		3.26	3.26	< 0.005	< 0.005	< 0.005	3.4
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005	0	0	0		0.16	0.16	< 0.005	< 0.005	< 0.005	0.17
Vendor		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.54	0.54	< 0.005	< 0.005	< 0.005	0.56
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0

3.12. Trenching (2024) - Mitigated

Location	TOG	ROG	NOx	CO	SO_x	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Onsite																		
Daily, Summer (Max)																		
Off-Road Equipment		0.02	0.02	1.1	0.99	< 0.005	0.03		0.03	0.03		0.03		142	142	0.01	< 0.005		142
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Off-Road Equipment		< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		2.72	2.72	< 0.005	< 0.005		2.73
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																		
Off-Road Equipment		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		0.45	0.45	< 0.005	< 0.005		0.45
Onsite truck		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Offsite																		
Daily, Summer (Max)																		
Worker		0.02	0.01	0.01	0.13	0	0	< 0.005	< 0.005	0	0	0		17.9	17.9	< 0.005	< 0.005	0.09	18.2
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Daily, Winter (Max)																		
Average Daily																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005	0	0	0		0.34	0.34	< 0.005	< 0.005	< 0.005	0.35
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Annual																		
Worker		< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005	0	0	0		0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Hauling		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Building Demolition	Demolition	45444	45454	5	7	
Building Demolition Debris Haul	Demolition	45444	45454	5	7	
Site Preparation	Site Preparation	45444	45448	5	3	
Site Preparation Soil Haul	Site Preparation	45444	45448	5	3	
Grading	Grading	45448	45454	5	5	
Utility Trenching	Trenching	45454	45462	5	7	

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1	8	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1	7	367	0.4
Site Preparation	Tractors/Loaders/Ba	Diesel	Average	1	8	84	0.37
Site Preparation Soil Haul	Graders	Diesel	Average	0	8	148	0.41
Site Preparation Soil Haul	Rubber Tired Dozers	Diesel	Average	0	7	367	0.4
Site Preparation Soil Haul	Tractors/Loaders/Ba	Diesel	Average	0	8	84	0.37
Grading	Graders	Diesel	Average	1	8	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1	8	367	0.4
Grading	Tractors/Loaders/Ba	Diesel	Average	2	7	84	0.37
Building Demolition	Concrete/Industrial S	Diesel	Average	1	8	33	0.73
Building Demolition	Rubber Tired Dozers	Diesel	Average	1	8	367	0.4
Building Demolition	Tractors/Loaders/Ba	Diesel	Average	3	8	84	0.37
Building Demolition Debris Haul	Concrete/Industrial S	Diesel	Average	0	8	33	0.73
Building Demolition Debris Haul	Rubber Tired Dozers	Diesel	Average	0	8	367	0.4
Building Demolition Debris Haul	Tractors/Loaders/Ba	Diesel	Average	0	8	84	0.37
Utility Trenching	Excavators	Diesel	Average	1	8	36	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Tier 4 Interim	1	8	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	1	7	367	0.4
Site Preparation	Tractors/Loaders/Ba	Diesel	Tier 4 Interim	1	8	84	0.37
Site Preparation Soil Haul	Graders	Diesel	Average	0	8	148	0.41
Site Preparation Soil Haul	Rubber Tired Dozers	Diesel	Average	0	7	367	0.4
Site Preparation Soil Haul	Tractors/Loaders/Ba	Diesel	Average	0	8	84	0.37
Grading	Graders	Diesel	Tier 4 Interim	1	8	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1	8	367	0.4
Grading	Tractors/Loaders/Ba	Diesel	Tier 4 Interim	2	7	84	0.37
Building Demolition	Concrete/Industrial S	Diesel	Tier 4 Interim	1	8	33	0.73
Building Demolition	Rubber Tired Dozers	Diesel	Tier 4 Interim	1	8	367	0.4
Building Demolition	Tractors/Loaders/Ba	Diesel	Tier 4 Interim	3	8	84	0.37
Building Demolition Debris Haul	Concrete/Industrial S	Diesel	Average	0	8	33	0.73
Building Demolition Debris Haul	Rubber Tired Dozers	Diesel	Average	0	8	367	0.4
Building Demolition Debris Haul	Tractors/Loaders/Ba	Diesel	Average	0	8	84	0.37
Utility Trenching	Excavators	Diesel	Tier 4 Interim	1	8	36	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per D	Miles per Trip	Vehicle Mix
Site Preparation				
Site Preparation	Worker	7.5	9.53	LDA,LDT1,LDT2
Site Preparation	Vendor	8	7.16	HHDT,MHDT
Site Preparation	Hauling	0	20	HHDT
Site Preparation	Onsite truck	0		HHDT
Site Preparation Soil Haul				
Site Preparation Soil Haul	Worker	0	9.53	LDA,LDT1,LDT2
Site Preparation Soil Haul	Vendor	0	7.16	HHDT,MHDT
Site Preparation Soil Haul	Hauling	62.7	20	HHDT
Site Preparation Soil Haul	Onsite truck	0		HHDT
Grading				
Grading	Worker	10	9.53	LDA,LDT1,LDT2
Grading	Vendor	10	7.16	HHDT,MHDT
Grading	Hauling	0	20	HHDT
Grading	Onsite truck	0		HHDT
Utility Trenching				
Utility Trenching	Worker	2.5	9.53	LDA,LDT1,LDT2
Utility Trenching	Vendor	0	7.16	HHDT,MHDT
Utility Trenching	Hauling	0	20	HHDT
Utility Trenching	Onsite truck	0		HHDT
Building Demolition				
Building Demolition	Worker	12.5	9.53	LDA,LDT1,LDT2
Building Demolition	Vendor	10	7.16	HHDT,MHDT
Building Demolition	Hauling	0	20	HHDT
Building Demolition	Onsite truck	0		HHDT
Building Demolition Debris Haul				
Building Demolition Debris Haul	Worker	0	9.53	LDA,LDT1,LDT2
Building Demolition Debris Haul	Vendor	0	7.16	HHDT,MHDT
Building Demolition Debris Haul	Hauling	6	20	HHDT
Building Demolition Debris Haul	Onsite truck	0		HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per D	Miles per Trip	Vehicle Mix
Site Preparation				
Site Preparation	Worker	7.5	9.53	LDA,LDT1,LDT2
Site Preparation	Vendor	8	7.16	HHDT,MHDT
Site Preparation	Hauling	0	20	HHDT
Site Preparation	Onsite truck	0		HHDT
Site Preparation Soil Haul				
Site Preparation Soil Haul	Worker	0	9.53	LDA,LDT1,LDT2
Site Preparation Soil Haul	Vendor	0	7.16	HHDT,MHDT

Site Preparation Soil Haul	Hauling	62.7	20	HHDT
Site Preparation Soil Haul	Onsite truck	0		HHDT
Grading				
Grading	Worker	10	9.53	LDA,LDT1,LDT2
Grading	Vendor	10	7.16	HHDT,MHDT
Grading	Hauling	0	20	HHDT
Grading	Onsite truck	0		HHDT
Utility Trenching				
Utility Trenching	Worker	2.5	9.53	LDA,LDT1,LDT2
Utility Trenching	Vendor	0	7.16	HHDT,MHDT
Utility Trenching	Hauling	0	20	HHDT
Utility Trenching	Onsite truck	0		HHDT
Building Demolition				
Building Demolition	Worker	12.5	9.53	LDA,LDT1,LDT2
Building Demolition	Vendor	10	7.16	HHDT,MHDT
Building Demolition	Hauling	0	20	HHDT
Building Demolition	Onsite truck	0		HHDT
Building Demolition Debris Haul				
Building Demolition Debris Haul	Worker	0	9.53	LDA,LDT1,LDT2
Building Demolition Debris Haul	Vendor	0	7.16	HHDT,MHDT
Building Demolition Debris Haul	Hauling	6	20	HHDT
Building Demolition Debris Haul	Onsite truck	0		HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction

5.5. Architectural Coatings

Phase Name	Residential Interior A	Residential Exterior A	Non-Residential Inte	Non-Residential Exte Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (C	Material Exported (C	Acres Graded (acres)	Material Demolished Acres Paved (acres)
Building Demolition	0	0	0	0
Building Demolition Debris Haul	0	0	0	414
Site Preparation	0	0	2.81	0
Site Preparation Soil Haul	0	1500	2.81	0
Grading	0	0	5	0

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Elementary School	0	0
Parking Lot	0.1	100
Other Non-Asphalt Surfaces	0.14	0
Other Non-Asphalt Surfaces	0.22	0
Other Non-Asphalt Surfaces	0.15	0

5.8. Construction Electricity Consumption and Emissions Factors

Year	kWh per Year	CO2	CH4	N2O
2024	0	537	0.09	0.01
2025	0	537	0.09	0.01

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	normalized constructions schedule based on information from District
Construction: Off-Road Equipment	additional excavator added for utilities trenching and finishing/landscaping based on information from similar projects.
Construction: Trips and VMT	see water truck calcs in assumptions file.
Construction: Dust From Material Mc	based on export information from District
Construction: Architectural Coatings	based on sqft of high school buildings, considers parking area only
Operations: Vehicle Data	ITE Trip Generation Manual 11th Ed. default trips were used to calculate the increase in student capacity by 50 students
Operations: Architectural Coatings	based on sqft of high school buildings, considers parking area only
Operations: Water and Waste Water	indoor water based on caleemod default indoor water use for 50 additional students
Operations: Solid Waste	See Section 3.19, Utilities and Service Systems. The proposed project would not increase overall District enrollment and would not generate solid waste beyond what is currently produced.
Characteristics: Project Details	a
Characteristics: Utility Information	Based on the Redwood Coast Energy Authority 2021 Power Mix for REpower.
Construction: Electricity	Redwood Coast Energy Authority Carbon Intensity Factors
Land Use	based on the information provided by the applicant

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

Chapter 13. Noise Element

13.1 Purpose

This Element identifies the County's approach to managing noise levels to minimize the exposure of community residents to excessive noise. The analysis follows the guidelines adopted by the Office of Noise Control of the California Department of Health Services.

13.2 Relationship to Other Elements

Noise levels are considered in the Land Use Element to avoid direct conflicts between neighboring uses and to establish patterns of land uses that minimize noise exposure. Policies in the Circulation Element related to road location, design, and non-motorized transportation can affect traffic noise levels. Policies of the Housing Element and Open Space Element also reflect noise considerations.

13.3 Background

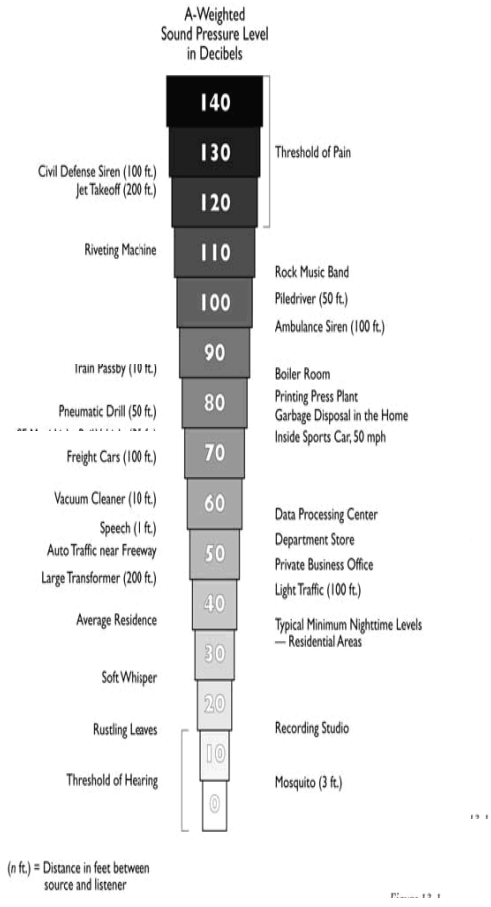
Measuring and Characterizing Noise

Assessing the community noise environment involves measuring three aspects of sound: level, frequency, and variation. Sound level is the magnitude or loudness of a sound, expressed in decibels (see Figure 13-1 and the glossary). Frequency is a measure of the pitch of the sound, and variation is the change in noise exposure over time. When sound is disagreeable or unwanted, it is considered noise.

Most community noise is produced by many distant sources, which rise and fall gradually throughout the day creating a relatively steady background sound having no identifiable source. The Community Noise Equivalent Level (CNEL) is a measure that describes average noise exposure over a period of time.

Because communities are more sensitive to impacts from nighttime noise, noise descriptors must specifically take this time period into account. Common measures include the CNEL and the Day-Night Average Level (Ldn). Both reflect noise exposure over an average day, with greater weight given to noise occurring during the evening and night. The two descriptors are roughly equivalent but CNEL is used in this Plan for regulating cumulative noise exposure over a 24-hour period.

Figure 13.1: Sound Level Comparison Chart



Noise levels of short duration, such as aircraft flyovers or concerts, are not well characterized by average noise level measurements yet are often the source of complaints. Maximum Noise Level (Lmax) is used in this Plan for the purposes of regulating short-term noise levels.

Principal Noise Sources

Table 13-A lists prominent noise sources within unincorporated areas of the county and Table 13-B provides the results of community noise surveys by ESA conducted in November 2016 for selected roadways in the incorporated, unincorporated, and rural areas of the County.

The Map Book Appendix contains noise level contours for state highways, selected county roads, county airports, and other prominent sources. Other noise sources not included in the inventory include noises from persons, pets and livestock, industrial equipment, and construction sites.

Table 13-A. Inventory of Prominent Sources of Noise within Communities of Humboldt County

	SOURCE OF NOISE			
COMMUNITY	**ROADS**	**AIRPORTS**	**RAILROAD***	**STATIONARY SOURCES**
ALTON	U.S. 101, State Highway 36	Rohnerville	Northwestern Pacific	NONE
ARCATA	U.S. 101, State Highways 299 & 255	NONE	Northwestern Pacific	NONE
BLOCKSBURG	NONE	NONE	NONE	Gravel operations
BLUE LAKE	State Highway 299	NONE	NONE	Gravel operations
BRIDGEVILLE	NONE	NONE	NONE	Gravel operations
CAPETOWN	NONE	NONE	NONE	Gravel operations
CARLOTTA	State Highway 36	NONE	NONE	Gravel operations
DINSMORE	State Highway 36	Dinsmore Airport	NONE	NONE
DYERVILLE	NONE	NONE	NONE	Gravel operations
EUREKA	U.S. 101, Myrtle Ave. Harris, Henderson & "H" St	Murray Field	Northwestern Pacific	Redwood Acres
FAIRHAVEN	New Navy Base Rd.	City of Eureka Airport	NONE	Racetrack
FERNDALE	State Highway 211	NONE	NONE	Fairgrounds, Gravel operations
FIELDBROOK	NONE	NONE	NONE	NONE

Table 13-A. Inventory of Prominent Sources of Noise within Communities of Humboldt County (Continued)

	SOURCE OF NOISE			
COMMUNITY	**ROADS**	**AIRPORTS**	**RAILROAD***	**STATIONARY SOURCES**
FIELDS LANDING	U.S. 101	NONE	Northwestern Pacific	Shipping operations
FORTUNA	U.S. 101, Main St.	Rohnerville Airport	Northwestern Pacific	Gravel operations
FRESHWATER	Freshwater Rd.	NONE	NONE	NONE
GARBERVILLE	U.S. 101	Airport	NONE	Gravel operations
HOOPA	State Highway 96	Former County Airport	NONE	Gravel operations
HYDESVILLE	State Highway 36, Rohnerville Rd.	Rohnerville	NONE	NONE
KNEELAND	NONE	Kneeland Airport	NONE	NONE
LOLETA	NONE	NONE	Northwestern Pacific	NONE
MANILA	State Highway 255 (New Navy Base Rd.)	NONE	NONE	NONE
MAPLE CREEK	NONE	NONE	NONE	Gravel operations
MARTIN'S FERRY/ WEITCHPEC	NONE	NONE	NONE	Gravel operations
McKINLEYVILLE	U.S. 101, Central Ave.	Eureka/Arcata Airport	NONE	Gun Club
MOONSTONE/ WESTHAVEN	U.S. 101	NONE	NONE	NONE
ORLEANS	NONE	NONE	NONE	Gravel operations
ORICK	U.S. 101	NONE	NONE	NONE
PETROLIA	NONE	NONE	NONE	Gravel operations
REDWAY	Redwood Dr.	NONE	NONE	NONE
RIO DELL	U.S. 101, Wildwood Ave.	NONE	Northwestern Pacific	NONE
ROHNERVILLE (See Fortuna)				
SAMOA	New Navy Base Rd.	NONE	NONE	Pulp mill, cogeneration plant, shipping operations

Table 13-A. Inventory of Prominent Sources of Noise within Communities of Humboldt County (Continued)

	SOURCE OF NOISE			
COMMUNITY	**ROADS**	**AIRPORTS**	**RAILROAD***	**STATIONARY SOURCES**
SCOTIA	U.S. 101	NONE	Northwestern Pacific	Mill, gravel operations
TRINIDAD	U.S. 101	NONE	NONE	NONE
SHELTER COVE	Shelter Cove Rd.	Shelter Cove	NONE	NONE
WEOTT	U.S. 101	NONE	NONE	NONE
WILLOW CREEK	State Highways 299 & 96	NONE	NONE	Gravel operations

* Note: The former Northwestern Pacific Railroad is now under the direction of the North Coast Railroad Authority. While local rail lines have not operated on a regular basis for several years, future rail usage should continue to be considered in land use planning decisions, unless the railroad right-of-ways are abandoned.

Traffic Noise

Traffic noise depends primarily on the speed of traffic and the percentage of truck traffic. The primary source of noise from automobiles is high-frequency tire noise, which increases with vehicle speed. In addition, trucks and older automobiles produce engine and exhaust noise, and trucks generate wind noise.

As illustrated in Table 13-B, Humboldt County is primarily subject to noise impacts from U.S. Highway 101, which creates noise in areas up to 500 feet away. Differences in elevation can amplify or dampen noise levels; for example, noise from a thoroughfare in a trough or valley between residential areas will be reflected upward and focused while noise from an elevated thoroughfare may dissipate. On flat ground, a buffer, such as a sound wall or dense vegetation, will greatly reduce noise escaping to surrounding areas. The California Department of Transportation (Caltrans) sometimes installs sound walls along state roads when new construction or widening is proposed. In Humboldt County, Caltrans has not pursued sound wall construction along existing highways.

Table 13-B. Traffic Noise Levels in Humboldt County, 2016						
Location	Route	Post Mile	Measured CNEL	Distance from Centerline (feet)	Distance to 65 CNEL (feet)	Distance to 60 CNEL (feet)
Benbow	US 101	9.1	73.4	86	312	673
North of Metropolitan Rd.	US 101	54.9	71.4	74	198	426
South of Loleta Dr.	US 101	65.6	75.1	56	264	569
North of Indianola Cutoff	US 101	82.8	75.6	112	570	1,228
North of Airport Rd.	US 101	94.2	69.6	106	215	463
South of Seawood Dr.	US 101	102.8	67.2	130	182	393
South of Bald Hills Rd.	US 101	122.0	68.0	58	92	198
South of Corbett Ranch Ln.	SR 36	7.7	68.1	27	43	94
East of Blue Lake Blvd.	SR 299	8.5	65.7	64	71	154
West of Will Rd.	SR 299	37.8	69.4	56	110	237
South of Orchard Park Ln.	SR 96	2.1	65.2	38	39	84
South of Owl Mine Rd.	SR 96	35.8	63.1	31	23	50
Source: ESA, 2016						

Noise surveys were conducted at various locations along US 101, State Route (SR) 299, SR 96 and SR 36 over a 24-hour period in November 14 through November 18, 2016. Monitoring sites included incorporated, unincorporated, and rural areas of the County. Distances to the 60 dBA CNEL contour ranged from 50 feet south of Owl Mine Road along SR 96 near Orleans to 1,228 feet north of Indianola Cutoff along Highway 101 near Brainard.

Airport Noise

Airport noise caused by aircraft depends on the type of aircraft and the frequency and direction of flights. Noise from aircraft warming up early in the morning can also be a significant source of noise from airports. Diagrams showing existing and projected noise levels associated with airport noise are contained in the County's Airport Land Use Compatibility Plans. The most current diagrams are shown in the Map Book Appendix.

Noise Compatibility

Evaluating new development projects for noise impacts should be based on a comparison of the noise compatibility standards in Table 13-C with noise contours and other available information. Fences, landscaping, and noise insulation can be used to mitigate the hazards of excessive noise levels.

A standard construction wood frame house reduces noise transmission by 15dBA. Since interior noise levels for residences are not to exceed 45dBA, the maximum exterior noise level for residences is 60dBA without requiring additional insulation. In areas where CNEL noise levels exceed 60dBA, the need for additional noise insulation will vary depending on the land use designation; adjacent uses; distance-to-noise source; and intervening topography, vegetation, and other buffers. The building code provides standards for meeting noise insulation requirements.

Appropriate standards for short-term noise levels measured by Lmax varies with the type of land use and time of day. Acceptable daytime levels in industrial and commercial areas are typically based on a combination of health and nuisance considerations and typically do not exceed 85 dBA. In residential areas, standards are typically set to avoid the perception of nuisance, such as noise levels that block normal conversation. Noise level above 66 dBA requires raised voices to be heard at a distance of three feet. Indoor noise levels between 50 and 60 dBA can disturb sleep.

The perception of nuisance will vary based upon sound level, frequency, and fluctuation. It also depends upon the character of the sound, number of noise events, familiarity and predictability, and the attitude of the listener. CNEL and Lmax are typically the basis for making nuisance determinations but other factors may be considered. For example, an annual high school parade may exceed residential noise levels but might not be deemed a nuisance.

Table 13-C Land Use / Noise Compatibility Standards

CLEARLY ACCEPTABLE | NORMALLY ACCEPTABLE | NORMALLY UNACCEPTABLE | CLEARLY UNACCEPTABLE

LAND USE INTERPRETATION FOR CNEL (or Ldn) VALUE

LAND USE CATEGORY	Maximum Interior Noise Levels*	50 – 60	61 - 70	71 - 80	81 - 90	91+
Residential Single Family, Duplex, Mobile Homes	45					
Residential Multiple Family, Dormitories, etc.	45					
Transient Lodging	45					
School Classrooms, Libraries, Churches	45					
Hospitals, Nursing Homes	45					
Auditoriums, Concert Halls, Music Shells	35					
Sports Arenas, Outdoor Spectator Sports						
Playgounds, Neighborhood Parks						
Golf Courses, Riding Stables, Water Rec., Cemeteries						

LAND USE CATEGORY	Maximum Interior Noise Levels*	50 – 60	61 - 70	71 - 80	81 - 90	91+
Office Buildings, Personal, Business & Professional	50					
Commercial: Retail, Movie Theaters, Restaurants	50					
Commercial: Wholesale, Some Retail, Ind., Mfg., Util.						
Manufacturing, Communications(Noise Sensitive)						
Livestock Farming, Animal Breeding						
Agriculture (except Livestock), Mining, Fishing						
Public Right-of-Way						
Extensive Natural Recreation Areas						

*Due to exterior sources

(Source: Bolt, Beranek, and Newman, Inc., 1974)

CLEARLY ACCEPTABLE: The noise exposure is such that the activities associated with the land use may be carried out with essentially no interference. (Residential areas: both indoor and outdoor noise environments are pleasant.)

NORMALLY ACCEPTABLE: The noise exposure is great enough to be of some concern, but common constructions will make the indoor environment acceptable, even for sleeping quarters. (Residential areas: the outdoor environment will be reasonably pleasant for recreation and play at the quiet end and will be tolerable at the noisy end.)

NORMALLY UNACCEPTABLE: The noise exposure is significantly more severe so that unusual and costly building constructions are necessary to ensure adequate performance of activities. (Residential areas: barriers must be erected between the site and prominent noise sources to make the outdoor environment tolerable.)

CLEARLY UNACCEPTABLE: The noise exposure at the site is so severe that construction costs to make the indoor environment acceptable for performance of activities would be prohibitive. (Residential areas: the outdoor environment would be intolerable for normal residential use.)

13.4 Goals and Policies

Goals

N-G1. **Excessive Noise.** A quiet and healthful environment with limited disagreeable noise.

N-G2. **Incompatible Land Uses.** Land uses arranged to reduce annoyance and complaints and minimize the exposure of community residents to excessive noise.

Policies

N-P1. **Minimize Noise from Stationary and Mobile Sources.** Minimize stationary noise sources and noise emanating from temporary activities by applying appropriate standards for average and short-term noise levels during permit review and subsequent monitoring.

N-P2. **Guide to Land Use Planning.** Evaluate current noise levels and mitigate projected noise levels when making community planning and zoning decisions to minimize the exposure of community residents to nuisance noise levels. Minimize vehicular and aircraft noise exposure by planning land uses compatible with transportation corridors and airports, and applying noise attenuation designs and construction standards. Avoid zoning patterns that permit people to "move to the nuisance" unless mitigated through project conditions or recorded notice.

N-P3. **Noise from U.S. Highway 101 (U.S. 101) and State Highway 299.** The County shall support efforts to reduce noise levels on U.S. 101 and State Highway 299 along sections in proximity to concentrated residential development through prioritized roadway surface maintenance, use of noise-reducing surface treatments, traffic-safe tree or shrub plantings, or, in cases of significant noise exposure, use of lower speed limits and construction of sound walls.

N-P4. **Protection from Excessive Noise.** Protect persons from existing or future excessive levels of noise which interfere with sleep, communication, relaxation, health or legally permitted use of property.

13.5 Standards

N-S1. **Land Use/Noise Compatibility Matrix.** The Land Use/Noise Compatibility Standards (Table 13-C) shall be used as a guide to ensure compatibility of land uses. Development may occur in areas identified as "normally unacceptable" if mitigation measures can reduce indoor noise levels to "Maximum Interior Noise Levels" and outdoor noise levels to the maximum "Normally Acceptable" value for the given Land Use Category.

N-S2. **Noise Impact Combining Zones.** The 20-year projected noise contours in the Map Book Appendix and the most current Airport Land Use Compatibility Plans shall be used to identify noise impact combining zone areas to indicate where special sound insulation measures may apply.

N-S3. **Environmental Review Process.** For noise sensitive locations where noise contours do not exist, the environmental review process required by the California Environmental Quality Act shall be utilized to generate the required analysis and determine the appropriate mitigation per Plan and state standards. Future noise levels shall be predicted for a period of at least 10 years from the time of building permit application.

N-S4. Noise Study Requirements. When a discretionary project has the potential to generate noise levels in excess of Plan standards, a noise study together with acceptable plans to assure compliance with the standards shall be required. The noise study shall measure or model as appropriate, Community Noise Equivalent Level (CNEL) and Maximum Noise Level (Lmax) levels at property lines and, if feasible, receptor locations. Noise studies shall be prepared by qualified individuals using calibrated equipment under currently accepted professional standards and include an analysis of the characteristics of the project in relation to noise levels, all feasible mitigations, and projected noise impacts. *The Noise Guidebook* published by the U.S. Department of Housing and Urban Development, or its equivalent, shall be used to guide analysis and mitigation recommendations.

N-S5. Noise Standards for Habitable Rooms. Noise reduction shall be required as necessary in new development to achieve a maximum of 45 CNEL (Community Noise Equivalent Level) interior noise levels in all habitable rooms per California building standards.

N-S6. Noise Reduction Requirements for Exterior Areas in Residential Zones. Newly created single family residential lots of 5,000 square feet or more, should contain a usable outdoor area at least 200 square feet in size per dwelling unit that meets the 60 CNEL (Community Noise Equivalent Level) standard.

N-S7. Short-term Noise Performance Standards (Lmax). The following noise standards, unless otherwise specifically indicated, shall apply to all property within their assigned noise zones and such standards shall constitute the maximum permissible noise level within the respective zones.

SHORT-TERM NOISE STANDARDS (Lmax)		
Zoning Classification	**Day (maximum) 6:00 a.m. to 10:00 p.m. dBA**	**Night (maximum) 10:00 p.m. to 6:00 a.m. dBA**
MG, MC, AE, TPZ,TC, AG, FP, FR, MH	80	70
CN, MB, ML, RRA, CG, CR	75	65
C-1, C-2. C-3, RM, R-3, R-4	65	60
RS, R-1, R-2, NR	65	60

Exceptions. The Short Term Noise levels shown in the above table shall not apply to uses such as, but not limited to:

1. Portable generator use in areas served by public electricity when electrical service is interrupted during emergencies as determined by the Planning Director.
2. Temporary events in conformance with an approved Conditional Use Permit.
3. Use of chainsaws for cutting firewood and power equipment used for landscape maintenance when accessory to permitted on-site uses.

4. Heavy equipment and power tools used during construction of permitted structures when conforming to the terms of the approved permit.
5. Emergency vehicles.

Protocol for measuring exceedances:

1. Calibrate and establish reference for sound meter:

   Decibel measurement made shall be based on a reference sound pressure of 0.0002 microbars as measured with a sound level meter using the "A" weighted network.

2. Determine ambient background noise levels:

   Ambient noise without the noise source in operation shall be observed at 15 second intervals for a period of 15 minutes, measured along the property line in a direct line between the noise source and the nearest receptor**.** The lowest reading is interpreted as the ambient noise level of that sampling point. If this reading is above the standard set for the noise zone, steps must be taken to determine the source or sources of the intruding high-level noise followed by appropriate control action before continuing the survey. If the reading is equal to or below the standard, the survey can proceed.

3. Measure for exceedences:

   With the noise source in operation, record the instantaneous response at 15 second intervals for a 15 minute period. Or, for a noise source of less than 15 minutes, record the instantaneous response at 15 second intervals for the time the noise source is in operation. The lowest response level recorded while the noise source is in operation is interpreted as the intruding noise level. Compare the intruding noise levels with the standard. If the noise level generated from the noise source exceeds the standard, the noise source is generating noise levels in excess of the allowable standards set for the noise zone.

13.6 Implementation Measures

N-IM1. **Noise Impact Combining Zone.** Utilize Noise Impact Combining Zone designations to identify areas where noise impact mitigations are required.

N-IM2. **Periodic Review of Combining Zones.** Periodically identify and evaluate potential noise problem areas for mitigation or as candidates for noise impact combining zones, particularly during Airport Land Use Compatibility Plan updates.

N-IM3. **Compliance Program.** The County shall investigate complaints of excessive noise and control noise sources consistent with the standards established by the Plan. Nuisance determinations shall be based on noise levels, duration, and number of noise events.

N-IM4. **Noise from U.S. Highway 101 (U.S. 101) and State Highway 299.** Working through its representation on Humboldt County Association of Governments (HCAOG), the County shall work with other affected jurisdictions and request California Department of Transportation (Caltrans) to consider implementing noise reduction measures on U.S. 101 and State Highway 299 along sections in proximity to concentrated residential development.

N-IM5. **Adoption of Performance Standards.** Adopt Industrial Performance Standards Countywide.

N-IM6. **Noise Control Ordinance.** Prepare and consider a noise control ordinance to regulate noise and vibration sources in order to protect persons from existing or future excessive levels of noise and/or vibration which interfere with sleep, communication, relaxation, health or legally permitted use of property. The ordinance shall define excessive levels of noise for construction activities to be incorporated as permit requirements and other noise sources and may exempt or modify noise requirements for agricultural uses, school functions, property maintenance, waste collection and other sources. The ordinance shall include responsibilities and procedures for enforcement, abatement and variances.

N-IM7. **Highways Noise Contours.** Request Caltrans to update current and projected noise contours for highways.

N-IM8. **Airport Noise Contours.** Incorporate into the Noise Impact Maps in Appendix F the new noise contour data for airports and surrounding areas from Airport Master Plans, and from new ALUPs within six months of adoption of a new ALUP.

N-IM9. **Garberville Airport Noise Impact Combining Zone.** Add a Noise Impact (N) Combining Zone to the areas surrounding the Garberville Airport that are subject to noise levels equal to or above 60 CNEL according to Figure 5B of the 2007 Garberville Airport Master Plan Report, or the most recent Garberville Airport Master Plan Report.

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CONSTRUCTION NOISE MODELING

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/24/2022
Case Description: HCOE-01.0

**** 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

	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
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: 10/24/2022
Case Description: HCOE-01.0

**** 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)
Crane	No	16		80.6	50.0	0.0
Generator	No	50		80.6	50.0	0.0
Tractor	No	40	84.0		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
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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
Total	84.0	82.5	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: 10/24/2022
Case Description: HCOE-01.0

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Finishing/Landscaping	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: 10/24/2022
Case Description: HCOE-01.0

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
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)
Grader	No	40	85.0		50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Tractor	No	40	84.0		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
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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
Total	85.0	84.6	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: 10/24/2022
Case Description: HCOE-01.0

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Paving	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Mixer Truck	No	40	78.8	50.0		0.0
Pavement Scarafier	No	20	89.5	50.0		0.0
Tractor	No	40	84.0	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
Concrete Mixer Truck	78.8	74.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier	89.5	82.5	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
Total	89.5	84.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/24/2022
Case Description: HCOE-01.0

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Site Preparation	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Tractor	No	40	84.0		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
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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
Total	85.0	84.6	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: 10/24/2022
Case Description: HCOE-01.0

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Utilities Trenching	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

HCOE-01 - Construction Noise Modeling Attenuation Calculations

		Levels in dBA Leq		
Phase	**RCNM Reference Noise Level**	**(Redwood Fields) Park to the North**	**(Winship Middle School) to the South**	**Residence to the West**
Distance in feet	*50*	*790*	*345*	*240*
Site Prep	84.6	60.6	67.8	71.0
Grading	84.6	60.6	67.8	71.0
Distance in feet	*50*	*715*	*290*	*140*
Building Construction	82.5	59.4	67.2	73.6
Architectural Coating	73.7	50.6	58.4	64.8
Distance in feet	*50*	*730*	*260*	*100*
Paving	84.9	61.6	70.6	78.9
Distance in feet	*50*	*710*	*280*	*110*
Finish/Landscaping	76.7	53.7	61.7	69.9
Utility Trenching	76.7	53.7	61.7	69.9

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)

HCOE-01 - Vibration Damage Attenuation Calculations

Levels, PPV (in/sec)

Distance in feet	**Vibration Reference Level at *25 feet***	**Residences to the Northwest** *729*	**(Winship Middle School) to the South** *200*	**Residence to the West** *50*
Vibratory Roller	0.21	0.001	0.009	0.074
Large Bulldozer	0.089	0.001	0.004	0.031
Caisson Drilling	0.089	0.001	0.004	0.031
Loaded Trucks	0.076	0.000	0.003	0.027
Jackhammer	0.035	0.000	0.002	0.012
Small Bulldozer	0.003	0.000	0.000	0.001

STATIONARY NOISE MODELING

HCOE-01 - HVAC Noise Modeling Attenuation Calculations

Phase	HVAC Reference Level	Receptor to West
Distance in feet	*3*	*115*
HVAC	72.0	40