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Petition for Modification
Tanager Battery Energy Storage System Project

Data Response Set 1B

Los Esteros Critical Energy Facility
03-AFC-02C

Submitted to
California Energy Commission

Submitted by
Los Esteros Critical Energy Facility, LLC

November 2025

LOS ESTEROS CRITICAL ENERGY FACILITY (03-AFC-02C)
Petition for Modification- Tanager BESS Project
DATA RESPONSE SET 1B

Los Esteros Critical Energy Facility, LLC, on behalf of Tanager Power, LLC, provides the following additional responses to the California Energy Commission ("CEC") Staff's Data Request Set 1. These responses address Data Requests A1 through A4 and A11 through A13, and supplements *Data Response Set 1A*[1] for the Tanager Battery Energy Storage System ("BESS") Project ("Project").

The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as presented in CEC Staff's Data Request Set 1[2] and are keyed to the Data Request numbers.

CONSTRUCTION IMPACTS ANALYSIS

DATA REQUESTS

A1 Please provide a construction emission estimate or a comparison of the construction activities with the original project construction. If California Emissions Estimator Model (CalEEMod) is used to quantify construction emissions, please use the most recent version (version 2022.1.1.29 as of April 4, 2025) and provide a JSON file containing the CalEEMod project.

Response: Please see Attachment DR-A1. Table A1-1 presents the estimated total and average daily emissions associated with construction of the proposed project. The emission estimates shown in Table A1-1 consider implementation of standard emissions minimization measures including fugitive dust control (i.e. watering exposed areas twice per day) and use of clean construction equipment (i.e., Tier 4 Final engines for equipment greater than 25 horsepower). Construction emissions were estimated using the most recent version of California Emissions Estimator Model (CalEEMod) (version 2022.1.1.30 as of August 12, 2025). Average daily emissions would not exceed the Bay Area Air District (BAAD) (formerly Bay Area Air Quality Management District [BAAQMD]) thresholds of significance.

Table A1-1. Construction-Related Total and Average Daily Emissions

Description	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total Emissions (tons)	0.14	0.86	0.02	0.02
Average Daily Emissions (pounds/day)	0.95	5.63	0.10	0.10
BAAD Threshold (pounds/day)	54	54	82	54
Threshold Exceedance?	No	No	No	No

Notes: ROG = reactive organic gases; NOx = nitrogen oxides; PM_{10} = particulate matter less than 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter; BAAD = Bay Area Air District.
Estimated by AECOM in 2025, values rounded to two decimal places. Average daily emissions estimates calculated based on an approximate 14-month construction schedule (305 construction workdays).
Refer to Attachment DR-A1 for assumptions and modeling output.
Source: BAAD 2022

[1] TN: 266305.
[2] TN: 264452.

A2 Please provide an ambient air quality impacts analysis for criteria pollutants during construction of the project modifications to show compliance with the California Ambient Air Quality Standards and the National Ambient Air Quality Standards or justify why such analysis is not needed.

Response: Please see Attachment DR-A1. An ambient air quality impact analysis was performed utilizing the mass emissions of the criteria air pollutants associated with construction activities and the American Meteorological Society/EPA Regulatory Model (AERMOD) dispersion model to estimate near ground-level concentrations for comparison to the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS). The San Francisco Bay Area Air Basin is designated as a nonattainment area for PM_{10} and $PM_{2.5}$. Therefore, the proposed project impacts were compared to the Environmental Protection Agency (EPA) significant impact levels (SILs) for these pollutants. SILs are considered to represent inconsequential levels of pollution exposure and would not contribute significantly to the NAAQS or CAAQS.

Table A2-1 presents the results of the ambient air quality analysis from the project boundary within the modeling domain. Refer to Attachment DR-A1 for additional modeling details and outputs.

Table A2-1. Maximum Ambient Air Quality Impacts During Construction (µg/m^3)

Pollutant	Averaging Period	Project Concentration	Ambient Background	Total Concentration	Limiting Standard	Percent of Standard
NO_2 [a]	CAAQS 1-hour[b]	10.63	110.92[f]	121.55	339	35.9%
	NAAQS 1-hour[c]	N/A	See footnote [g,h]	85.60	188	45.5%
	Annual[b]	0.23	17.21[f]	17.45	57	30.6%
CO	1-hour[b]	69.90	1,610.00[i]	1,679.90	23,000	7.3%
	8-hour[b]	27.61	1,610.00[i]	1,637.61	10,000	16.4%
PM_{10}	24-hour[b]	0.94	N/A	0.94	5[e]	18.8%
	Annual[b]	0.28	N/A	0.28	1[e]	28.0%
$PM_{2.5}$	24-hour[b]	0.26	N/A	0.26	1.2[e]	21.9%
	Annual[b]	0.12	N/A	0.12	0.13[e]	88.6%
SO_2	CAAQS 1-hour[b]	0.11	93.53[i]	93.64	655	14.3%
	NAAQS 1-hour[d]	0.10	4.10[i]	4.20	196	2.1%
	24-hour[b]	0.022	2.79[i]	2.79	105	2.7%

Notes:

[a] NO_2 impacts were modeled using the Tier 2 conversion method of ARM2 in AERMOD.

[b] Maximum concentration (1st rank).

[c] 98th percentile ranked valued averaged over 5-years.

[d] 99th percentile ranked valued averaged over 5-years.

[e] Limiting Standard is based on the EPA SIL given the nonattainment status of the area from existing conditions already exceeding the ambient air quality standard.
[f] Highest concentration from Jackson Street, San Jose monitor (2021-2023) as 2024 did not meet minimum data capture requirements.
[g] 3-year average design value from Jackston Street, San Jose monitor (2021-2023) as 2024 did not meet minimum data capture requirements.
[h] Used EPA's Tier 2 method (EPA 2011) for background that applies a 3-year average 98th percentile seasonal, hour-of-day varying value to the modeled source concentration directly in the model. Output from the model is the total project plus background value.
[i] Highest concentration from Jackson Street, San Jose monitor (2022-2024).

As shown in Table A2-1, concentrations would not exceed the NAAQS or CAAQS during construction of the proposed project for all pollutants. Refer to Attachment DR-A1 for additional modeling details and outputs. For the annual $PM_{2.5}$ standard, the maximum project impact occurs along the southern edge of the project boundary. Proposed project impacts then quickly decrease with distance from the project boundary. Table A2-2 compares the project-level construction impacts for the annual and 24-hour $PM_{2.5}$ standard at the maximum sensitive or worker receptor, whichever is higher, to the EPA SIL. As shown in Table A2-2, the maximum $PM_{2.5}$ concentration at the sensitive or worker receptor locations would be lower than the maximum concentration along the project boundary. Therefore, the proposed project would comply with the CAAQS and NAAQS.

Table A2-2. Maximum 24-Hour and Annual $PM_{2.5}$ Impacts During Construction at Sensitive Receptors (µg/m^3)

Pollutant	Receptor Type	Project Concentration	EPA SIL	Percent of Standard
24-hour $PM_{2.5}$	Worker	0.032	1.2	2.7%
	Resident	0.015		1.3%
Annual $PM_{2.5}$	Worker	0.011	0.13	8.5%
	Resident	0.005		3.8%

Notes: Closest worker receptor in an office park located approximately 965 feet to the south of the project area at modeled coordinate 594,760 meters Easting and 4,142,020 meters Northing. Closest residential receptor is located at the Griffis South Bay apartment complex at modeled coordinate 594,760 meters Easting and 4,141,790 meters Northing.

A3 Please provide a health risk assessment for toxic air contaminants during construction of the project modifications to show the health risks are below the Bay Area Air Quality Management District (BAAQMD) thresholds or justify why such assessment is not needed.

Response: Please see Attachment DR-A1. A health risk assessment was performed to evaluate the toxic air contaminants (TACs) impacts during construction for comparison to the BAAD health risk thresholds. The analysis utilized AERMOD and the Hotspots Analysis and Report Program Version 2 (HARP2) to estimate carcinogenic and noncarcinogenic health risks. Additional assumptions and model inputs and outputs are provided in Attachment DR-A1.

Table A3-1 presents the cancer risk results associated with construction of the proposed project at the maximum sensitive and worker individual receptor locations. As shown in Table A3-1, the maximum individual cancer risk for both sensitive and worker receptors is well below the BAAD threshold of 10 in one million.

Table A3-2 summarizes the maximum chronic non-cancer and acute risks at sensitive and worker receptors during project construction. The chronic and acute risk are also well below the thresholds.

Table A3-1. Project Construction Maximum Modeled Excess Cancer Risk Concentrations at Sensitive and Worker Receptors

Receptor	Duration	Cancer Risk (in a million) [6]	BAAD Threshold	Exceeds Threshold?
Sensitive/Resident[3,5]	24 months	0.13[1]	10	No
Worker[4,5]	24 months	0.24[2]	10	No

Notes: BAAD = Bay Area Air District; HRA = health risk assessment; UTM = Universal Transverse Mercator

1. *Receptor location: X (UTM) = 594,760.00, Y (UTM) = 4,141,791.00*
2. *Receptor location: X (UTM) = 594,760.00, Y (UTM) = 4,142,020.00*
3. Starting age for residences: 3rd trimester in utero
4. Starting age for workers: 16 years
5. Conservatively modeled a longer duration at 24 months compared to the actual 14-months as 6 months is the shortest exposure duration available in HARP (3rd trimester in utero – 1 year 9 months old for sensitive/resident receptor age; ages 16 and 17 for worker receptor).
6. Values are the estimated cancer risk for the first floor of the closest residential receptor, a multi-story apartment building on Murphy Ranch Road. AECOM also evaluated risk at higher elevations (above the first-floor elevation) and determined that the risk would be lower.

Table A3-2. Project Construction Maximum Modeled Chronic Non-Cancer and Acute Risk at Sensitive and Worker Receptors

Receptor	Maximum Chronic Non-Cancer Risk	Maximum Acute Risk	BAAD Threshold	Exceeds Threshold?
Sensitive/Resident[1]	7.43E-05	5.27E-05[3]	1	No
Worker[2]	1.40E-04	9.38E-05[4]	1	No

Notes: BAAD = Bay Area Air District; HRA = health risk assessment; UTM = Universal Transverse Mercator

1. *Receptor location: X (UTM) = 594,760.00, Y (UTM) = 4,141,791.00*
2. *Receptor location: X (UTM) = 594,760.00, Y (UTM) = 4,142,020.00*
3. *Receptor location: X (UTM) = 593,740.00, Y (UTM) = 4,141,760.00*
4. *Receptor location: X (UTM) = 593,780.00, Y (UTM) = 4,141,900.00*

A4 If the result of cancer risk is greater than 10 in one million, please provide a map containing health risk isopleths, including an isopleth showing the risk value of 10 in one million.

Response: As shown in Table A3-1, the maximum individual cancer risk for both sensitive and worker receptors is substantially below 10 in one million. Therefore, a map containing the health risk isopleths is not provided.

THERMAL RUNAWAY

DATA REQUESTS

A8 Provide the exact locations (latitude and longitude or UTM coordinates) and dimensions of the BESS enclosures for modeling purposes. Also include the following input parameters for a dispersion modeling analysis of all potential criteria air pollutants, greenhouse gases, and toxic air contaminants (TACs) that could be generated during combustion: emission rates (in grams/second), exhaust temperature, exhaust diameter, pressure, and exhaust gas velocity resulting from battery damage or thermal runaway of the whole project. Note to include the calculation worksheet, if available.

Response: A response will be provided as part of Data Response Set 1C.

A9 A copy of the dispersion modeling analysis of all potential criteria air pollutants and TACs for the thermal runaway scenario using a well-validated model (AERMOD preferred).

Response: A response will be provided as part of Data Response Set 1C.

A10 A comparison of the modeled fire-related TACs concentrations to the U.S. EPA Acute Exposure Guideline Levels (AEGL) and the OEHHA/CARB acute Reference Exposure Levels (RELs) and demonstrate whether the acute hazard Index (HI) of TACs would be higher than the significance threshold of 1 at sensitive receptors. Please demonstrate whether the criteria air pollutant impacts would cause or contribute to any exceedance of ambient air quality standards. If exceedances occur, provide a detailed Emergency Response Plan and outline the applicable regulatory notification requirements.

Response: A response will be provided as part of Data Response Set 1C.

BURROWING OWL INCIDENTAL TAKE AUTHORIZATION

DATA REQUESTS

A11 If the project owner would like to pursue incidental take coverage, please provide all information that would be required in an ITP application for CESA- listed or candidate species, specifically burrowing owl, including an impacts analysis and proposed mitigation measures (Cal. Code of Regs., tit.14, § 783.2). Information regarding the project description, schedule, and location has already been provided.

Information on what is required in a typical ITP application can be located here: https://wildlife.ca.gov/Conservation/CESA/Permitting/Incidental-Take-Permits

Response: Burrowing owl mitigation for LECEF, including the proposed site for the Tanager BESS Project, was reviewed and approved in consultation with the

CEC, and implemented by LECEF. The Project nevertheless intends to consult with CEC Staff and the California Department of Fish and Wildlife (CDFW), consistent with the prior mitigation for disturbance and lack of documented use of the site.

Focused surveys of the Project site were conducted in spring 2025 to evaluate potential suitable habitat conditions and the potential presence of burrowing owls using the methods described in the 2012 California Department of Fish and Game (now CDFW) Staff Report on Burrowing Owl Mitigation. Survey details and findings are provided as Attachment DR-A11. The initial habitat assessment documented that the site had tall grass that is not associated with sites that support burrowing owl foraging and nesting. Routine vegetation management for fire abatement in between multiple rounds of surveys improved habitat conditions for burrowing owl foraging, however, no burrowing owls or sign of burrowing owls were observed onsite or in the immediate areas surrounding the Project site during the habitat assessment and subsequent focused surveys. In addition, there are no documented CNDDB occurrences of burrowing owl within the Project site, and no other indicia of presence. This is true notwithstanding an abundance of active ground squirrel burrows and burrow complexes.

Nesting and foraging burrowing owls are present off-site, approximately 0.4 miles (approximately 2,000 feet) from the Project site in a preserve area that is actively managed to support burrowing owls. Previous studies of the foraging and movement of the burrowing owls at the preserve have not documented any use of the Project site. Nevertheless, given the proximity of occupied habitat, the Project has not ruled out the possibility of seeking an incidental take permit to avoid disruptions to the construction schedule. (Additional discussion of the Project's intentions is provided below in Data Responses A12 and A13).

A12 Please describe any existing compensatory mitigation for the Los Esteros Critical Energy Facility (03-AFC-02C) and how this could potentially apply to the amendment activities for the Tanager BESS and issuance of an incidental take for the project.

Response: Burrowing Owl mitigation for the LECEF Phase 2 project, including the proposed site for the Tanager BESS Project, was reviewed and approved in consultation with the CEC, and implemented by LECEF. Specifically, the Commission's decision in Los Esteros Phase 2 in October 2006 (TN #: 224679) included Conditions BIO-11 (Survey And Provide Habitat Compensation For Burrowing Owls) and BIO-18 (Burrowing Owl Management Plan), which were successfully implemented. Consistent with the Commission's Decision for the LECEF Phase 2 project, approximately six acres of land was allocated as an open space easement, and suitable habitat was created in accordance with the approved Landscape Plan (which primarily relies on routine mowing to ensure that grasses are kept sufficiently short to allow BUOW to spot predators.

Given that LECEF already mitigated for Burrowing Owl impacts for the whole of the Project area, and further taking into consideration that (1) the Project site

has no documented presence of Burrowing Owls and (2) habitat is marginal (due to high grass, an active ground squirrel population, and nearby resident predators, including multiple red-tailed hawks), the Project would like to discuss with CEC Staff and CDFW whether the potential impacts of the BESS development have already been fully mitigated and whether this prior mitigation could support issuance of incidental take authorization.

*A13 If the project owner declines to pursue incidental take coverage, please provide a revised **BIO-11** or other avoidance and minimization measures to fully avoid take of burrowing owl.*

Response: No presence of Burrowing Owl or Burrowing Owl sign was found during multiple surveys of the Project site conducted in 2025. The Project would like to consult with CEC Staff and CDFW to better understand its obligations if it were to seek an incidental take permit, given the prior mitigation for disturbance and lack of documented use of the site. Given the context of the Project, other measures, such as timing new ground disturbance for BESS construction to avoid the nesting season, might be sufficient to fully avoid take.

LOS ESTEROS CRITICAL ENERGY FACILITY (03-AFC-02C)

Petition for Modification- Tanager BESS Project

DATA RESPONSE SET 1B

ATTACHMENT DR-A1

AECOM
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Project name:
Tanager Battery Energy Storage System
(03- AFC-02C)

To:
Nadira Basdeo, PMP
EHS Program Manager
3003 Oak Road, Suite 400
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From:
Paola Peña, AECOM
Christopher Warren, AECOM
Mary Kaplan, AECOM

Date:
November 14, 2025

CC:
Steve Leach, AECOM

Air Quality Analysis and Health Risk Assessment Memo

Executive Summary

Los Esteros Critical Energy Facility (LECEF), LLC, on behalf of Tanager Power, LLC, provides the following Air Quality Analysis and Health Risk Assessment (HRA) technical memorandum to support the air quality related responses to the California Energy Commission (CEC) Staff's Data Requests Set 1, A1 through A4, for the proposed Tanager Battery Energy Storage System (BESS) (proposed project).

A construction mass emissions estimates, ambient air quality analysis (AAQA) and HRA were performed to evaluate air quality impacts and health risk exposure at nearby sensitive receptors to the proposed project located in the City of San Jose. The construction mass emission estimates, AAQA, and HRA were prepared consistent with guidance and methodologies from regional, state, and federal agencies, including the Bay Area Air District (BAAD), the California Air Resources Board (CARB), the Office of Environmental Health Hazard Assessment (OEHHA), and the United States Environmental Protection Agency (EPA).

Construction-related mass emissions, health risks, and an evaluation of criteria pollutant concentrations were evaluated for the proposed project. Average daily emissions of volatile organic compounds (VOCs), nitrogen oxides (NOx), particulate matter less than 10 micrometers in diameter (PM_{10}), and particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$) were quantified and compared to the BAAD recommended thresholds of significance. The health risks evaluation included cancer, chronic non-cancer and acute risks for comparison to the BAAD recommended thresholds of significance. Excess cancer and chronic non-cancer health risks were evaluated for the proposed project for the duration of construction at sensitive receptors and off-site worker locations. The AAQA compared the maximum short-term (hourly and daily) to the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) for nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), PM_{10} and $PM_{2.5}$. A summary of the results and comparison to the applicable thresholds is presented in Table ES-1.

Table ES-1. Construction-Related Air Quality Analysis

Analysis	Threshold	Comparison to Threshold
Construction Mass Emissions	BAAD Average Daily Thresholds of Significance	Below thresholds

Analysis	Threshold	Comparison to Threshold
Ambient Air Quality Analysis	National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS)	Below thresholds
Health Risk Assessment	BAAD Excess Cancer, Non-cancer Chronic, and Acute Risk Thresholds of Significance	Below thresholds

Source: BAAD 2022a, CARB 2024

Project Overview

LECEF, LLC, on behalf of Tanager Power, LLC proposes to construct and operate the proposed project at the former laydown and construction parking area for the LECEF. The proposed project consists of the installation of a nominal 200-megawatt lithium-ion BESS, generation interconnection line (gen-tie), and communication system. The proposed project will provide grid support and reliability services to the Bay Area Local Reliability Area.

Methodology

Construction Mass Emissions

Construction-related activities are temporary, short-term sources of criteria air pollutant emissions. Sources of construction-related criteria air pollutants include exhaust emissions from on-road (worker and haul truck trips) and off-road equipment (i.e., construction equipment); fugitive dust from site preparation and grading activities (e.g., ground disturbance, stockpiling, truck loading) and travel on roads; and off-gassing from paving activities. Construction emissions associated with the proposed project were estimated using the California Emissions Estimator Model (CalEEMod) Version 2022.1.1.30. CalEEMod allows the user to enter project-specific construction information, such as the construction schedule, material import or export quantities, estimated haul truck trips.

For the purposes of estimating mass emissions, project construction was assumed to begin in December 2026 and last approximately 14 months. CalEEMod default values were used for project parameters where specific information was unavailable. For example, based on the proposed project site acreage, CalEEMod default equipment parameters (types, quantities, and usage hours per day) were utilized based on the anticipated construction phases for the proposed project (i.e., site preparation, grading, concrete and battery placement, and paving). Construction equipment would include: dozers, tractors/loaders/backhoes, excavators, graders, scrapers, cranes, forklifts, generator sets, welders, pavers, paving equipment, and rollers. Consistent with standard emissions minimization measures, the analysis incorporated Tier 4 Final engine standards for construction equipment larger than 25 horsepower (hp). AECOM estimated that approximately 13,500 cubic yards (CY) of material would be excavated and exported off-site associated with grading activities for the concrete slab foundations, detention basin, and gen-tie poles. Additionally, it was conservatively estimated that 1,500 CY of concrete and 31,000 CY of gravel would be required. The analysis also assumed that 12 haul truck trips would be required to deliver the battery containers. For the purposes of the analysis, it was assumed that the truck trips for battery deliveries would originate from the Port of Oakland, approximately 36 miles away from the proposed project site. Additionally, a water truck was assumed to be required during site preparation and grading activities for compliance with BAAD fugitive dust control rules and regulations associated with watering exposed areas twice daily. It is anticipated that construction activities would require an average of 100 daily workers per day. Additional assumptions and modeling outputs are provided in Attachment A.

Dispersion Modeling

The American Meteorological Society/EPA Regulatory Model (AERMOD) (EPA 2024a) dispersion model (Version 24142)[1] was used to estimate pollutant concentrations at specific distances from proposed project emission sources,

[1] Latest version available at the time analysis was performed.

in conjunction with representative meteorological data. The meteorological dataset that was determined to be the most representative of the proposed project site was Moffett Federal Airfield, approximately six (6) miles west of the proposed project site and likely similar influence by the southern portion of the San Francisco Bay at both locations. The predominant flow from the Moffett Federal Airfield meteorological station is from the north-northwest (i.e., flow from the bay to inland). The modeling used the five (5)-year period of 2012 through 2017. The meteorological data was obtained from BAAD's website in model-ready format (BAAD 2022b).

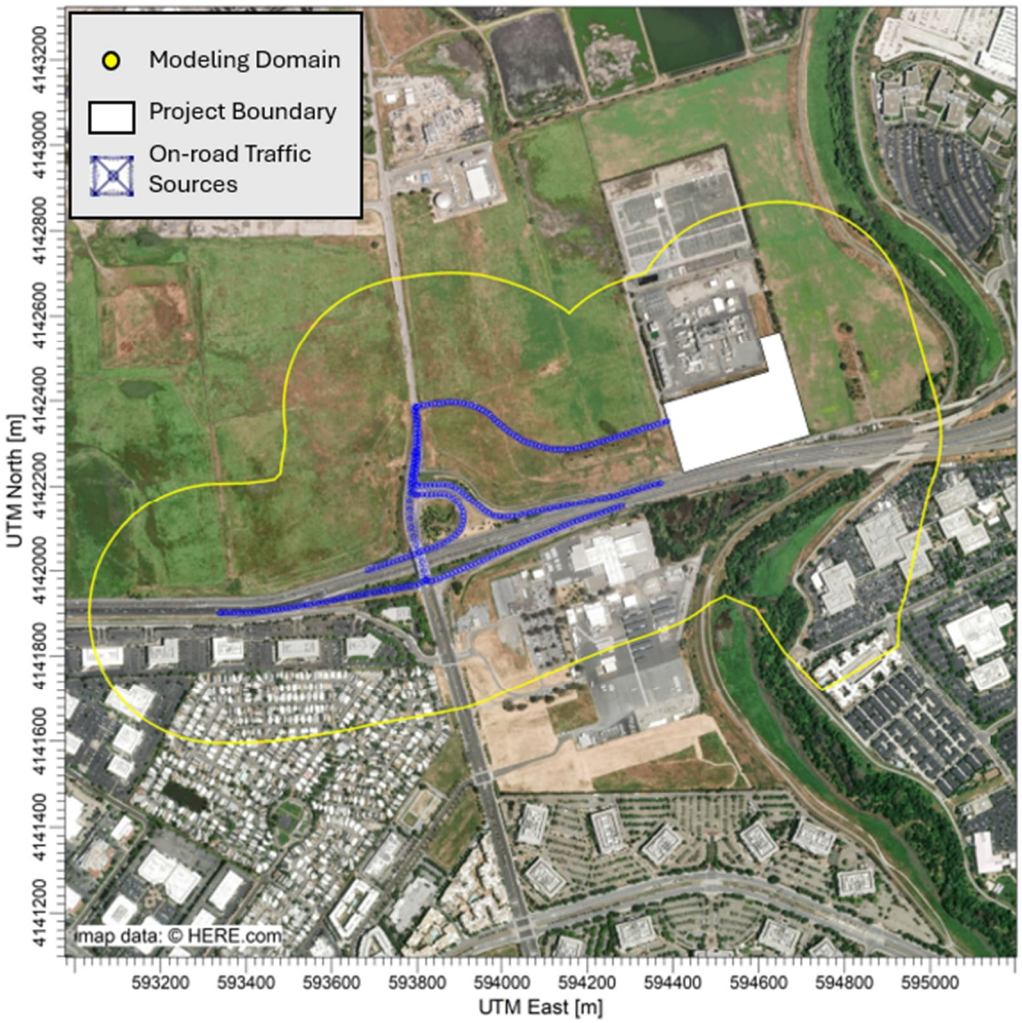
The model was run using default, regulatory options. Consistent with EPA guidance, an analysis of land cover within approximately 10,000 feet (3 kilometers) of the project site indicates it meets urban criteria for modeling (i.e., urban land cover encompasses greater than 50% of the 3 km area). Therefore, urban dispersion characteristics were used in the model. This option requires a representative population, which was calculated from 2020 Census data to be 399,203 to account for cities surrounding the project (Milpitas, Sunnyvale, North San Jose, and Santa Clara). The modeling considered the hours of construction (7AM to 5PM, Monday through Friday) and did not model pollutant emissions on the weekend or at night.

Modeled receptor locations were placed at a spacing of approximately 65 feet (20 meters) within 1,000 feet of the proposed project boundary and selected segments of the construction access routes, consistent with BAAD guidance (BAAD 2022b)[2]. Additional receptors were added at an apartment complex located approximately 1,660 feet (0.3 mile) south of the project site as these residences are downwind of the project boundary. All receptors were assigned elevations based on digitized terrain elevation data developed by the United State Geological Survey (USGS 2024). In accordance with BAAD guidance, receptors were assigned a flagpole height of 5 feet (1.5 meters) to mimic the average breathing height of an individual. Figure 1 depicts the modeled boundary of receptor locations relative to the proposed project site.

Off-road and on-road construction sources utilized for onsite project activities (such as site preparation, grading, concrete and battery placement, and paving) were modeled as adjacent volume sources covering the footprint of the construction area. Fugitive dust generated by construction activities was modeled as a single area source spanning the footprint of the construction area. Offsite, on-road vehicles (e.g., haul trucks, vendor, and worker vehicle emissions) were modeled as adjacent volume sources along the anticipated construction routes to and from the proposed project site and the Southbay Freeway (State Route 237). The construction road segments were extended to the on- and off-ramps of State Route 237 where the on-road vehicles would then merge with other freeway traffic. Additional details on the source inputs used in the modeling are provided in Attachment B.

[2] As detailed in the BAAD CEQA Guidelines, Appendix A: Thresholds of Significance Justification, the 1,000 foot radius is consistent with findings in CARB's 2005 *Land Use Compatibility Handbook*, the Health & Safety Code §42301.6 (Notice for Possible Source Near School), and studies such as that of Zhu et al (2002) which found that concentrations of particulate matter tend to be reduced substantially at a distance 1,000 feet downwind from sources such as freeways or large distribution centers.

Figure 1. Map of Modeled Area Surrounding the Project



Ambient Air Quality Analysis

The AAQA utilized the mass emissions for criteria pollutants (NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$) and the AERMOD dispersion model to estimate near ground-level concentrations resulting from proposed project construction activities. Because both the NAAQS and CAAQS are cumulative standards, the assessment considered the combined impact of regional background concentrations and project-related emissions. The only exception applies to any pollutants that have existing concentrations exceeding the NAAQS or CAAQS, indicating the area is in nonattainment with the applicable NAAQS or CAAQS. The San Francisco Bay Area Basin is designated as a nonattainment area for $PM_{2.5}$ for both the NAAQS and CAAQS, and a nonattainment area for PM_{10} for only the CAAQS. As a result, project-level impacts for PM_{10} and $PM_{2.5}$ were compared to EPA's significant impact levels (SILs). SILs are considered to represent inconsequential levels of pollution exposure and would not contribute significantly to the NAAQS. In addition, BAAD has established a threshold of significance for annual $PM_{2.5}$ at 0.3 µg/m^3, but this is less stringent than the EPA SIL of 0.13 µg/m^3. The SILs are summarized in Table 3 below.

For the AAQA, the maximum annual mass emissions were used to model pollutants with annual averaging periods. The maximum annual emissions were then scaled based on the number of days and hours of construction to generate the daily and hourly rates for each criteria pollutant which was selected as the input to the model runs, consistent with the averaging periods specified by the NAAQS and CAAQS.

Health Risk Assessment

Risk characterization integrates exposure information provided by the dispersion modeling with potential health effects associated with specific toxic air contaminants (TACs) to quantify estimates of potential health risks associated with TACs that sensitive and worker receptors of the proposed project would be exposed. The CARB developed the Hotspots Analysis and Report Program Version 2 (HARP2) to estimate carcinogenic and noncarcinogenic health risks from projects. The HARP2 model uses the equations and algorithms contained in OEHHA's Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2015) to calculate health risks based on input parameters such as emissions, "unit" ground-level concentrations, and toxicological data based on the OEHHA 2015 Risk Assessment Guidelines.

TACs generated by construction activities from the proposed project are primarily associated with diesel particulate matter (DPM), assumed to be PM_{10}, from diesel-fueled equipment and vehicles, and gasoline-fueled sources (e.g., worker vehicles). AERMOD was run using unit emissions, meaning each source was modeled assuming 1 gram per second (g/s) divided by the number of volume sources in a road segment or 1 g/s divided by the area source in square meters. The unitized AERMOD results for each source are output in microgram per cubic meter per gram per second ($\mu g/m^3$ per g/s). Maximum hourly and period-average output files generated by AERMOD were then input to HARP2 with corresponding TAC emission rates for the entire construction period to calculate proposed project concentration contributions.

Cancer risk is a cumulative exposure risk. Cancer risk exposure to sensitive (i.e., residential) and worker receptors was evaluated for a period of 24 months (conservative in comparison to the construction period of 14 months) with a starting age of third trimester in utero and age 16, respectively. An age-sensitivity factor (ASF) is applied to cancer risk calculated in HARP2, with the youngest ages receiving the highest factor. In addition to cancer risk, chronic non-cancer and acute risks were also evaluated on sensitive receptors exposed to TACs (i.e., DPM and those associated with gasoline-fired vehicles) generated from construction activities. The risk calculations in HARP2 used the OEHHA 2015-recommended default values. Additional assumptions and model inputs and outputs are provided in Attachment B.

Results

Data Request A1

Please provide a construction emission estimate or a comparison of the construction activities with the original project construction. If California Emissions Estimator Model (CalEEMod) is used to quantify construction emissions, please use the most recent version (version 2022.1.1.29 as of April 4, 2025) and provide a JSON file containing the CalEEMod project. Table 1 presents the estimated total and average daily emissions associated with construction of the proposed project. As described above, the emission estimates below include incorporation of fugitive dust control measures (i.e., watering exposed areas twice per day) and clean construction equipment (i.e., Tier 4 Final engines for equipment larger than 25 hp). As shown in Table 1, average daily emissions would not exceed the BAAD thresholds of significance.

Table 1. Construction-Related Total and Average Daily Emissions

Description	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total Emissions (tons)	0.14	0.86	0.02	0.02
Average Daily Emissions (pounds/day)	0.95	5.63	0.10	0.10
BAAD Threshold (pounds/day)	54	54	82	54
Threshold Exceedance?	No	No	No	No

Notes: Estimated by AECOM in 2025, values rounded to two decimal places. Average daily emissions estimates calculated based on an approximate 14-month construction schedule (305 construction workdays).
ROG = reactive organic gases; NOx = nitrogen oxides; PM_{10} = particulate matter less than 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter; BAAD = Bay Area Air District.
Source: BAAD 2022a

Data Request A2

Please provide an ambient air quality impacts analysis for criteria pollutants during construction of the project modifications to show compliance with the California Ambient Air Quality Standards and the National Ambient Air Quality Standards or justify why such analysis is not needed.

Table 2 presents the results from the AAQA associated with construction of the proposed project. Background concentrations from the most recent 3-year period (2022-2024) were obtained from the Jackson Street ambient monitor in San Jose, CA. As described previously, since the area is in nonattainment for PM_{10} and $PM_{2.5}$, the existing PM_{10} and $PM_{2.5}$ background concentrations are already above the limiting standards. Therefore, the proposed project impacts were compared to the EPA SILs for these pollutants. The limiting standard column in Table 2 represents the combined CAAQS and NAAQS, whichever is more stringent. As shown in Table 2, concentrations would not exceed the NAAQS or CAAQS during construction of the proposed project for all pollutants. The results presented in Table 2 are the impacts from project construction from the project boundary extending out 1,000 feet with additional receptors at an apartment complex located approximately 1,660 feet south. For the annual $PM_{2.5}$ standard, the maximum project impact occurs along the southern edge of the project boundary. Proposed project impacts then quickly decrease with distance from the project boundary as shown in Figure 2. The closest sensitive or worker receptors to the proposed project are approximately 1,625 feet and 750 feet, respectively. Table 3 compares the project-level construction impacts for 24-hour and annual $PM_{2.5}$ at the maximum sensitive or worker receptor, whichever is higher, to the EPA SIL. As shown in Table 3, the maximum $PM_{2.5}$ concentration at the sensitive or worker receptor locations would be lower than the maximum concentration along the project boundary as the concentrations decrease with distance.

Figure 2. Map of Annual $PM_{2.5}$ Concentrations

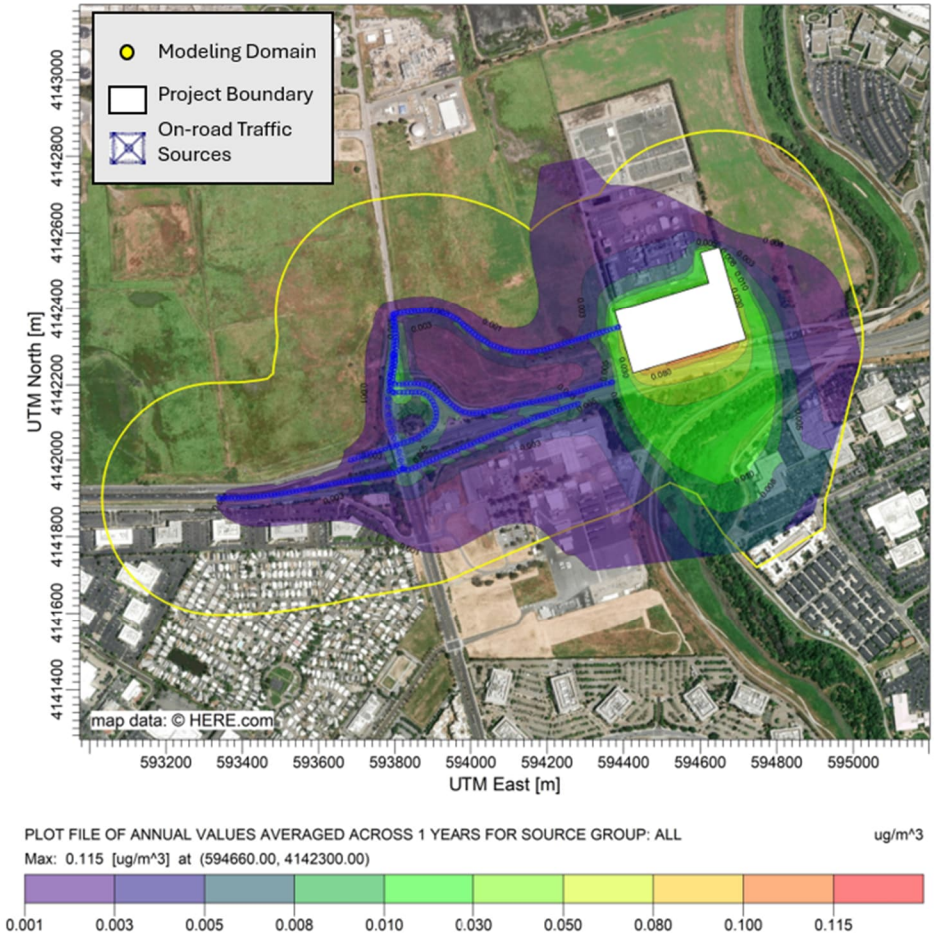


Table 2. Maximum Ambient Air Quality Impacts During Construction (µg/m³)

Pollutant	Averaging Period	Project Concentration	Ambient Background	Total Concentration	Limiting Standard	Percent of Standard
NO_2 [a]	CAAQS 1-hour[b]	10.63	110.92[f]	121.55	339	35.9%
	NAAQS 1-hour[c]	N/A	See footnote [g,h]	85.60	188	45.5%
	Annual[b]	0.23	17.21[f]	17.45	57	30.6%
CO	1-hour[b]	69.90	1,610.00[i]	1,679.90	23,000	7.3%
	8-hour[b]	27.61	1,610.00[i]	1,637.61	10,000	16.4%
PM_{10}	24-hour[b]	0.94	N/A	0.94	5[e]	18.8%
	Annual[b]	0.28	N/A	0.28	1[e]	28.0%
$PM_{2.5}$	24-hour[b]	0.26	N/A	0.26	1.2[e]	21.9%
	Annual[b]	0.12	N/A	0.12	0.13[e]	88.6%
SO_2	CAAQS 1-hour[b]	0.11	93.53[i]	93.64	655	14.3%
	NAAQS 1-hour[d]	0.10	4.10[i]	4.20	196	2.1%
	24-hour[b]	0.022	2.79[i]	2.79	105	2.7%

Notes:
[a] NO_2 impacts were modeled using the Tier 2 conversion method of ARM2 in AERMOD.
[b] Maximum concentration (1st rank).
[c] 98th percentile ranked valued averaged over 5-years.
[d] 99th percentile ranked valued averaged over 5-years.
[e] Limiting Standard is based on the EPA SIL given the nonattainment status of the area from existing conditions already exceeding the ambient air quality standard.
[f] Highest concentration from Jackson Street, San Jose monitor (2021-2023) as 2024 did not meet minimum data capture requirements.
[g] 3-year average design value from Jackston Street, San Jose monitor (2021-2023) as 2024 did not meet minimum data capture requirements.
[h] Used EPA's Tier 2 method (EPA 2011) for background that applies a 3-year average 98th percentile seasonal, hour-of-day varying value to the modeled source concentration directly in the model. Output from the model is the total project plus background value.
[i] Highest concentration from Jackson Street, San Jose monitor (2022-2024).

Table 3. Maximum 24-hour and Annual $PM_{2.5}$ Impacts During Construction at Sensitive Receptors (µg/m³)

Pollutant	Receptor Type	Project Concentration	EPA SIL	Percent of Standard
24-hour $PM_{2.5}$	Worker	0.032	1.2	2.7%
	Resident	0.015		1.3%
Annual $PM_{2.5}$	Worker	0.011	0.13	8.5%
	Resident	0.005		3.8%

Notes: Closest worker receptor in an office park located approximately 965 feet to the south of the project area at modeled coordinate 594,760 meters Easting and 4,142,020 meters Northing. Closest residential receptor is an apartment complex at modeled coordinate 594,760 meters Easting and 4,141,790 meters Northing.

Data Requests A3 and A4

Please provide a health risk assessment for toxic air contaminants during construction of the project modifications to show the health risks are below the Bay Area Air Quality Management District (BAAD) thresholds or justify why such assessment is not needed.

If the result of cancer risk is greater than 10 in one million, please provide a map containing health risk isopleths, including an isopleth showing the risk value of 10 in one million.

The maximum individual excess cancer risk is an estimate of the highest increased cancer risk an individual can expect from exposure to TACs from the proposed project construction activities. Table 4 presents the results from the HRA associated with construction of the proposed project for the maximum sensitive and worker individual receptors. As shown in Table 4, the maximum individual cancer risk for both sensitive and worker receptors is well below the BAAD threshold of 10 in one million. Therefore, a map containing the health risk isopleths is not provided.

Table 5 summarizes the maximum chronic non-cancer and acute risks at sensitive and worker receptors during project construction. The chronic and acute risk are also well below the thresholds.

Table 4. Project Construction Maximum Modeled Excess Cancer Risk Concentrations at Sensitive and Worker Receptors

Receptor	Duration	Cancer Risk (in a million)[6]	BAAD Threshold	Exceeds Threshold?
Sensitive/Resident[3,5]	24 months	0.13[1]	10	No
Worker[4,5]	24 months	0.24[2]	10	No

Notes: BAAD = Bay Area Air District; HRA = health risk assessment; UTM = Universal Transverse Mercator

1. *Receptor location: X (UTM) = 594,760.00, Y (UTM) = 4,141,791.00*
2. *Receptor location: X (UTM) = 594,760.00, Y (UTM) = 4,142,020.00*
3. Starting age for residences: 3rd trimester in utero
4. Starting age for workers: 16 years
5. Conservatively modeled a longer duration at 24 months compared to the actual 14-months as 6 months is the shortest exposure duration available in HARP (3rd trimester in utero – 1 year 9 months old for sensitive/resident receptor age; ages 16 and 17 for worker receptor).
6. Values are the estimated cancer risk for the first floor of the closest residential receptor, a multi-story apartment building on Murphy Ranch Road. AECOM also evaluated risk at higher elevations (above the first-floor elevation) and determined that the risk would be lower.

Table 5. Construction Chronic Non-Cancer and Acute Risk at Sensitive and Worker Receptors

Receptor	Maximum Chronic Non-Cancer Risk	Maximum Acute Risk	BAAD Threshold	Exceeds Threshold?
Sensitive/Resident[1]	7.43E-05	5.27E-05[3]	1	No
Worker[2]	1.40E-04	9.38E-05[4]	1	No

Notes: BAAD = Bay Area Air District; HRA = health risk assessment; UTM = Universal Transverse Mercator

1. *Receptor location: X (UTM) = 594,760.00, Y (UTM) = 4,141,791.00*
2. *Receptor location: X (UTM) = 594,760.00, Y (UTM) = 4,142,020.00*
3. *Receptor location: X (UTM) = 593,740.00, Y (UTM) = 4,141,760.00*
4. *Receptor location: X (UTM) = 593,780.00, Y (UTM) = 4,141,900.00*

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Attachment A: CalEEMod Construction Outputs

Los Esteros Battery Energy Storage System Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Los Esteros Battery Energy Storage System
Construction Start Date	12/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	31.0
Location	800 Thomas Foon Chew Way, San Jose, CA 95134, USA
County	Santa Clara
City	San Jose
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1796
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	20.5	Acre	20.5	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.02	1.62	11.9	21.1	0.04	0.36	2.13	2.49	0.33	0.52	0.85	—	5,801	5,801	0.26	0.36	8.98	5,925
Mit.	1.14	0.92	5.34	23.0	0.04	0.10	2.13	2.23	0.09	0.52	0.61	—	5,801	5,801	0.26	0.36	8.98	5,925
% Reduced	44%	43%	55%	-9%	—	73%	—	11%	72%	—	28%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.45	3.70	30.4	35.4	0.07	1.24	9.33	10.6	1.14	4.33	5.48	—	10,176	10,176	0.47	0.45	0.27	10,321
Mit.	1.47	1.24	7.60	43.1	0.07	0.15	9.33	9.43	0.15	4.33	4.43	—	10,176	10,176	0.47	0.45	0.27	10,321
% Reduced	67%	67%	75%	-22%	—	88%	—	11%	87%	—	19%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.71	1.38	10.6	16.1	0.03	0.34	1.94	2.29	0.32	0.54	0.86	—	4,614	4,614	0.22	0.27	2.79	4,702
Mit.	0.83	0.68	4.15	18.2	0.03	0.08	1.94	2.02	0.07	0.54	0.61	—	4,614	4,614	0.22	0.27	2.79	4,702
% Reduced	51%	51%	61%	-13%	—	78%	—	12%	77%	—	28%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.31	0.25	1.94	2.93	0.01	0.06	0.35	0.42	0.06	0.10	0.16	—	764	764	0.04	0.04	0.46	778
Mit.	0.15	0.12	0.76	3.32	0.01	0.01	0.35	0.37	0.01	0.10	0.11	—	764	764	0.04	0.04	0.46	778
% Reduced	51%	51%	61%	-13%	—	78%	—	12%	77%	—	28%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	2.02	1.62	11.9	21.1	0.04	0.36	2.13	2.49	0.33	0.52	0.85	—	5,801	5,801	0.26	0.36	8.98	5,925
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	4.45	3.70	30.4	35.4	0.07	1.24	9.33	10.6	1.14	4.33	5.48	—	10,176	10,176	0.47	0.45	0.27	10,321
2027	4.30	3.52	28.6	34.6	0.07	1.07	5.78	6.85	0.99	1.96	2.94	—	10,101	10,101	0.46	0.43	0.24	10,241
2028	1.93	1.54	11.6	19.7	0.04	0.32	2.13	2.45	0.30	0.52	0.82	—	5,609	5,609	0.26	0.36	0.21	5,724
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.28	0.23	1.90	2.22	< 0.005	0.07	0.44	0.51	0.07	0.17	0.24	—	571	571	0.02	0.02	0.24	578
2027	1.71	1.38	10.6	16.1	0.03	0.34	1.94	2.29	0.32	0.54	0.86	—	4,614	4,614	0.22	0.27	2.79	4,702
2028	0.09	0.07	0.47	0.95	< 0.005	0.02	0.10	0.12	0.01	0.02	0.04	—	212	212	0.01	0.01	0.14	215
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.05	0.04	0.35	0.41	< 0.005	0.01	0.08	0.09	0.01	0.03	0.04	—	94.5	94.5	< 0.005	< 0.005	0.04	95.6
2027	0.31	0.25	1.94	2.93	0.01	0.06	0.35	0.42	0.06	0.10	0.16	—	764	764	0.04	0.04	0.46	778
2028	0.02	0.01	0.09	0.17	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	35.1	35.1	< 0.005	< 0.005	0.02	35.6

2.3. Construction Emissions by Year, Mitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.14	0.92	5.34	23.0	0.04	0.10	2.13	2.23	0.09	0.52	0.61	—	5,801	5,801	0.26	0.36	8.98	5,925
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.47	1.24	7.60	43.1	0.07	0.15	9.33	9.43	0.15	4.33	4.43	—	10,176	10,176	0.47	0.45	0.27	10,321
2027	1.43	1.22	7.44	42.6	0.07	0.15	5.78	5.93	0.15	1.96	2.11	—	10,101	10,101	0.46	0.43	0.24	10,241
2028	1.09	0.88	5.44	21.6	0.04	0.10	2.13	2.22	0.09	0.52	0.61	—	5,609	5,609	0.26	0.36	0.21	5,724
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.08	0.07	0.38	2.53	< 0.005	0.01	0.44	0.45	0.01	0.17	0.18	—	571	571	0.02	0.02	0.24	578
2027	0.83	0.68	4.15	18.2	0.03	0.08	1.94	2.02	0.07	0.54	0.61	—	4,614	4,614	0.22	0.27	2.79	4,702
2028	0.05	0.04	0.18	1.01	< 0.005	< 0.005	0.10	0.10	< 0.005	0.02	0.03	—	212	212	0.01	0.01	0.14	215
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.02	0.01	0.07	0.46	< 0.005	< 0.005	0.08	0.08	< 0.005	0.03	0.03	—	94.5	94.5	< 0.005	< 0.005	0.04	95.6
2027	0.15	0.12	0.76	3.32	0.01	0.01	0.35	0.37	0.01	0.10	0.11	—	764	764	0.04	0.04	0.46	778
2028	0.01	0.01	0.03	0.18	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	35.1	35.1	< 0.005	< 0.005	0.02	35.6

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.74	3.14	29.2	28.8	0.05	1.24	—	1.24	1.14	—	1.14	—	5,298	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.64	0.63	< 0.005	0.03	—	0.03	0.03	—	0.03	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	0.17	0.17	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.12	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.2	19.2	< 0.005	< 0.005	—	19.3
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.63	0.56	0.55	6.51	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,558	1,558	0.04	0.07	0.16	1,580
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.1	53.1	< 0.005	0.01	< 0.005	55.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	34.5	34.5	< 0.005	< 0.005	0.06	35.0
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.16	1.16	< 0.005	< 0.005	< 0.005	1.22
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.72	5.72	< 0.005	< 0.005	0.01	5.80
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Site Preparation (2026) - Mitigated

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

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

Off-Roa Equipment	0.50	0.50	2.59	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,298	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.62	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	0.17	0.17	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.2	19.2	< 0.005	< 0.005	—	19.3
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.63	0.56	0.55	6.51	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,558	1,558	0.04	0.07	0.16	1,580
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.1	53.1	< 0.005	0.01	< 0.005	55.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	34.5	34.5	< 0.005	< 0.005	0.06	35.0
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.16	1.16	< 0.005	< 0.005	< 0.005	1.22
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.72	5.72	< 0.005	< 0.005	0.01	5.80
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62	3.04	27.2	27.6	0.06	1.12	—	1.12	1.03	—	1.03	—	6,599	6,599	0.27	0.05	—	6,621

Dust From Material Movement	—	—	—	—	—	—	3.60	3.60	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.12	1.13	< 0.005	0.05	—	0.05	0.04	—	0.04	—	271	271	0.01	< 0.005	—	272
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.20	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	44.9	44.9	< 0.005	< 0.005	—	45.1
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.63	0.56	0.55	6.51	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,558	1,558	0.04	0.07	0.16	1,580

Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.1	53.1	< 0.005	0.01	< 0.005	55.4
Hauling	0.20	0.04	2.55	1.20	0.01	0.02	0.52	0.54	0.02	0.14	0.17	—	1,966	1,966	0.16	0.32	0.11	2,064
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	64.7	64.7	< 0.005	< 0.005	0.11	65.7
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.18	2.18	< 0.005	< 0.005	< 0.005	2.28
Hauling	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	80.8	80.8	0.01	0.01	0.07	84.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.7	10.7	< 0.005	< 0.005	0.02	10.9
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.36	0.36	< 0.005	< 0.005	< 0.005	0.38
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.4	13.4	< 0.005	< 0.005	0.01	14.1

3.4. Grading (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.64	4.43	35.3	0.06	0.12	—	0.12	0.12	—	0.12	—	6,599	6,599	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	3.60	3.60	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.18	1.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	271	271	0.01	< 0.005	—	272
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	44.9	44.9	< 0.005	< 0.005	—	45.1
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.63	0.56	0.55	6.51	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,558	1,558	0.04	0.07	0.16	1,580
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.1	53.1	< 0.005	0.01	< 0.005	55.4
Hauling	0.20	0.04	2.55	1.20	0.01	0.02	0.52	0.54	0.02	0.14	0.17	—	1,966	1,966	0.16	0.32	0.11	2,064
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	64.7	64.7	< 0.005	< 0.005	0.11	65.7

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.18	2.18	< 0.005	< 0.005	< 0.005	2.28
Hauling	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	80.8	80.8	0.01	0.01	0.07	84.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.7	10.7	< 0.005	< 0.005	0.02	10.9
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.36	0.36	< 0.005	< 0.005	< 0.005	0.38
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.4	13.4	< 0.005	< 0.005	0.01	14.1

3.5. Grading (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.51	2.95	25.6	27.3	0.06	1.04	—	1.04	0.96	—	0.96	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	3.60	3.60	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.36	3.15	3.36	0.01	0.13	—	0.13	0.12	—	0.12	—	813	813	0.03	0.01	—	816

Dust From Material Movement	—	—	—	—	—	—	0.44	0.44	—	0.18	0.18	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.58	0.61	< 0.005	0.02	—	0.02	0.02	—	0.02	—	135	135	0.01	< 0.005	—	135
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.60	0.54	0.49	6.08	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,529	1,529	0.04	0.06	0.14	1,550
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.0	52.0	< 0.005	0.01	< 0.005	54.4
Hauling	0.18	0.04	2.46	1.17	0.01	0.02	0.52	0.54	0.02	0.14	0.17	—	1,921	1,921	0.15	0.30	0.10	2,016
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.74	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	191	191	< 0.005	0.01	0.29	193
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.41	6.41	< 0.005	< 0.005	0.01	6.71
Hauling	0.02	0.01	0.30	0.14	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	237	237	0.02	0.04	0.20	249
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	31.6	31.6	< 0.005	< 0.005	0.05	32.0

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.06	1.06	< 0.005	< 0.005	< 0.005	1.11
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.2	39.2	< 0.005	0.01	0.03	41.2

3.6. Grading (2027) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.64	4.43	35.3	0.06	0.12	—	0.12	0.12	—	0.12	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	3.60	3.60	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	0.55	4.36	0.01	0.02	—	0.02	0.02	—	0.02	—	813	813	0.03	0.01	—	816
Dust From Material Movement	—	—	—	—	—	—	0.44	0.44	—	0.18	0.18	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.80	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	135	135	0.01	< 0.005	—	135
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.60	0.54	0.49	6.08	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,529	1,529	0.04	0.06	0.14	1,550
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.0	52.0	< 0.005	0.01	< 0.005	54.4
Hauling	0.18	0.04	2.46	1.17	0.01	0.02	0.52	0.54	0.02	0.14	0.17	—	1,921	1,921	0.15	0.30	0.10	2,016
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.74	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	191	191	< 0.005	0.01	0.29	193
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.41	6.41	< 0.005	< 0.005	0.01	6.71
Hauling	0.02	0.01	0.30	0.14	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	237	237	0.02	0.04	0.20	249
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	31.6	31.6	< 0.005	< 0.005	0.05	32.0
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.06	1.06	< 0.005	< 0.005	< 0.005	1.11
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.2	39.2	< 0.005	0.01	0.03	41.2

3.7. Building Construction (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	0.61	5.55	7.65	0.01	0.20	—	0.20	0.18	—	0.18	—	1,417	1,417	0.06	0.01	—	1,422
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.01	1.40	< 0.005	0.04	—	0.04	0.03	—	0.03	—	235	235	0.01	< 0.005	—	235
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.62	0.55	0.42	7.13	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,651	1,651	0.03	0.06	5.54	1,676
Vendor	0.02	< 0.005	0.28	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	244	244	0.02	0.04	0.48	257
Hauling	0.15	0.03	1.83	0.92	0.01	0.02	0.41	0.43	0.02	0.11	0.13	—	1,509	1,509	0.12	0.24	2.95	1,586
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.60	0.54	0.49	6.08	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,529	1,529	0.04	0.06	0.14	1,550
Vendor	0.02	< 0.005	0.29	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	244	244	0.02	0.04	0.01	256
Hauling	0.15	0.03	1.93	0.92	0.01	0.02	0.41	0.43	0.02	0.11	0.13	—	1,510	1,510	0.12	0.24	0.08	1,584
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.35	0.31	0.29	3.56	0.00	0.00	0.96	0.96	0.00	0.22	0.22	—	914	914	0.02	0.04	1.41	927
Vendor	0.01	< 0.005	0.17	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	144	144	0.01	0.02	0.12	152
Hauling	0.09	0.02	1.12	0.54	0.01	0.01	0.24	0.25	0.01	0.07	0.08	—	892	892	0.07	0.14	0.76	937
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.65	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	151	151	< 0.005	0.01	0.23	153
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.9	23.9	< 0.005	< 0.005	0.02	25.1
Hauling	0.02	< 0.005	0.20	0.10	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.13	155

3.8. Building Construction (2027) - Mitigated

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

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

Off-Road	0.35	0.33	2.82	14.8	0.02	0.07	—	0.07	0.07	—	0.07	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.33	2.82	14.8	0.02	0.07	—	0.07	0.07	—	0.07	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.19	1.67	8.76	0.01	0.04	—	0.04	0.04	—	0.04	—	1,417	1,417	0.06	0.01	—	1,422
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.30	1.60	< 0.005	0.01	—	0.01	0.01	—	0.01	—	235	235	0.01	< 0.005	—	235
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.62	0.55	0.42	7.13	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,651	1,651	0.03	0.06	5.54	1,676
Vendor	0.02	< 0.005	0.28	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	244	244	0.02	0.04	0.48	257
Hauling	0.15	0.03	1.83	0.92	0.01	0.02	0.41	0.43	0.02	0.11	0.13	—	1,509	1,509	0.12	0.24	2.95	1,586

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.60	0.54	0.49	6.08	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,529	1,529	0.04	0.06	0.14	1,550
Vendor	0.02	< 0.005	0.29	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	244	244	0.02	0.04	0.01	256
Hauling	0.15	0.03	1.93	0.92	0.01	0.02	0.41	0.43	0.02	0.11	0.13	—	1,510	1,510	0.12	0.24	0.08	1,584
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.35	0.31	0.29	3.56	0.00	0.00	0.96	0.96	0.00	0.22	0.22	—	914	914	0.02	0.04	1.41	927
Vendor	0.01	< 0.005	0.17	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	144	144	0.01	0.02	0.12	152
Hauling	0.09	0.02	1.12	0.54	0.01	0.01	0.24	0.25	0.01	0.07	0.08	—	892	892	0.07	0.14	0.76	937
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.65	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	151	151	< 0.005	0.01	0.23	153
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.9	23.9	< 0.005	< 0.005	0.02	25.1
Hauling	0.02	< 0.005	0.20	0.10	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.13	155

3.9. Building Construction (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.12	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	32.8	32.8	< 0.005	< 0.005	—	33.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.44	5.44	< 0.005	< 0.005	—	5.46
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.58	0.51	0.49	5.72	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,503	1,503	0.04	0.06	0.13	1,523
Vendor	0.02	< 0.005	0.28	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	238	238	0.02	0.04	0.01	250
Hauling	0.14	0.03	1.86	0.89	0.01	0.02	0.41	0.43	0.02	0.11	0.13	—	1,471	1,471	0.11	0.24	0.07	1,545
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.8	20.8	< 0.005	< 0.005	0.03	21.1
Vendor	< 0.005	< 0.005	< 0.005	< 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	3.43
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.1	20.1	< 0.005	< 0.005	0.02	21.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.45	3.45	< 0.005	< 0.005	< 0.005	3.50
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	0.57
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.33	3.33	< 0.005	< 0.005	< 0.005	3.50

3.10. Building Construction (2028) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.33	2.81	14.8	0.02	0.07	—	0.07	0.07	—	0.07	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	32.8	32.8	< 0.005	< 0.005	—	33.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.44	5.44	< 0.005	< 0.005	—	5.46
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.58	0.51	0.49	5.72	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,503	1,503	0.04	0.06	0.13	1,523
Vendor	0.02	< 0.005	0.28	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	238	238	0.02	0.04	0.01	250
Hauling	0.14	0.03	1.86	0.89	0.01	0.02	0.41	0.43	0.02	0.11	0.13	—	1,471	1,471	0.11	0.24	0.07	1,545
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.8	20.8	< 0.005	< 0.005	0.03	21.1
Vendor	< 0.005	< 0.005	< 0.005	< 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	3.43
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.1	20.1	< 0.005	< 0.005	0.02	21.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.45	3.45	< 0.005	< 0.005	< 0.005	3.50
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	0.57
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.33	3.33	< 0.005	< 0.005	< 0.005	3.50

3.11. Paving (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.82	0.69	6.63	9.91	0.01	0.26	—	0.26	0.24	—	0.24	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.29	0.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	66.2	66.2	< 0.005	< 0.005	—	66.5
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.0	11.0	< 0.005	< 0.005	—	11.0
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.58	0.51	0.49	5.72	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,503	1,503	0.04	0.06	0.13	1,523
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	50.7	50.7	< 0.005	0.01	< 0.005	53.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.25	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	66.6	66.6	< 0.005	< 0.005	0.09	67.6
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.22	2.22	< 0.005	< 0.005	< 0.005	2.32
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.0	11.0	< 0.005	< 0.005	0.02	11.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.38
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Paving (2028) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.16	1.93	10.6	0.01	0.03	—	0.03	0.03	—	0.03	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.46	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.2	66.2	< 0.005	< 0.005	—	66.5
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	< 0.005	< 0.005	0.02	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.0	11.0	< 0.005	< 0.005	—	11.0
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.58	0.51	0.49	5.72	0.00	0.00	1.65	1.65	0.00	0.39	0.39	—	1,503	1,503	0.04	0.06	0.13	1,523
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	50.7	50.7	< 0.005	0.01	< 0.005	53.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.25	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	66.6	66.6	< 0.005	< 0.005	0.09	67.6
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.22	2.22	< 0.005	< 0.005	< 0.005	2.32
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.0	11.0	< 0.005	< 0.005	0.02	11.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.38
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

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

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

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

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

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

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Phase	Phase Description
Site Preparation	Site Preparation	12/1/2026	12/10/2026	5.00	8.00	—
Grading	Grading	12/11/2026	3/4/2027	5.00	60.0	—
Building Construction	Building Construction	3/5/2027	1/7/2028	5.00	221	—
Paving	Paving	1/8/2028	1/31/2028	5.00	16.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48

Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	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	Rubber Tired Dozers	Diesel	Tier 4 Final	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Tier 4 Final	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 4 Final	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Final	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Final	2.00	8.00	81.0	0.42

Paving	Paving Equipment	Diesel	Tier 4 Final	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	200	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	2.00	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	200	11.7	LDA,LDT1,LDT2
Grading	Vendor	2.00	8.40	HHDT,MHDT
Grading	Hauling	28.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	200	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	2.00	36.0	HHDT
Building Construction	Hauling	22.0	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	200	11.7	LDA,LDT1,LDT2
Paving	Vendor	2.00	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	200	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	2.00	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	200	11.7	LDA,LDT1,LDT2
Grading	Vendor	2.00	8.40	HHDT,MHDT
Grading	Hauling	28.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	200	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	2.00	36.0	HHDT
Building Construction	Hauling	22.0	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	200	11.7	LDA,LDT1,LDT2
Paving	Vendor	2.00	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

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

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	12.0	0.00	—
Grading	0.00	13,494	72.0	0.00	—
Paving	0.00	0.00	0.00	0.00	20.5

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	20.5	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	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 (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	12.4	annual days of extreme heat
Extreme Precipitation	2.60	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	1	1	1	2
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	15.0

AQ-PM	19.4
AQ-DPM	29.0
Drinking Water	39.0
Lead Risk Housing	50.6
Pesticides	0.00
Toxic Releases	30.3
Traffic	94.1
Effect Indicators	—
CleanUp Sites	99.4
Groundwater	94.2
Haz Waste Facilities/Generators	93.2
Impaired Water Bodies	91.9
Solid Waste	100.0
Sensitive Population	—
Asthma	38.0
Cardio-vascular	40.0
Low Birth Weights	98.8
Socioeconomic Factor Indicators	—
Education	73.4
Housing	23.8
Linguistic	—
Poverty	27.9
Unemployment	36.4

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	65.64865905
Employed	58.03926601
Median HI	67.43231105
Education	—
Bachelor's or higher	46.42627999
High school enrollment	100
Preschool enrollment	71.06377518
Transportation	—
Auto Access	50.77633774
Active commuting	35.32657513
Social	—
2-parent households	66.12344412
Voting	58.42422687
Neighborhood	—
Alcohol availability	48.03028359
Park access	58.14192224
Retail density	62.49197998
Supermarket access	14.28204799
Tree canopy	39.85628128
Housing	—
Homeownership	46.75991274
Housing habitability	62.22250738
Low-inc homeowner severe housing cost burden	75.25984858
Low-inc renter severe housing cost burden	47.02938535
Uncrowded housing	42.73065572
Health Outcomes	—
Insured adults	53.9715129
Arthritis	0.0

Asthma ER Admissions	20.1
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	80.1
Cognitively Disabled	95.5
Physically Disabled	78.7
Heart Attack ER Admissions	65.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	96.4
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	3.9
Children	55.0
Elderly	87.4
English Speaking	31.8
Foreign-born	65.1

Outdoor Workers	23.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	21.5
Traffic Density	88.2
Traffic Access	46.8
Other Indices	—
Hardship	40.7
Other Decision Support	—
2016 Voting	69.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	67.0
Healthy Places Index Score for Project Location (b)	64.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Default construction schedule adjusted to project's 14-month construction duration.
Construction: Trips and VMT	Updated per 100 average daily workers; haul trucks based on concrete and gravel deliveries. Vendor trips to account for battery deliveries, water truck, and misc. deliveries. Misc. deliveries and battery deliveries assumed to come from the Port of Oakland (36 miles from the project site).
Construction: Dust From Material Movement	Material excavation estimated for concrete slab foundations, detention basin, and gen-tie poles.

Attachment B: AAQA and HRA Modeling Inputs

Annual Emissions Summary by Construction Phase

Units: TONS/YEAR

Construction Phase		2026 ROG	2026 NOx	2026 SO2	2026 Exhaust PM2.5	2026 Fugitive PM2.5	2026 Exhaust PM10	2026 PM10D	2026 PM10 Total	2026 PM2.5 Total	2027 ROG	2027 NOx	2027 SO2	2027 Exhaust PM2.5	2027 Fugitive PM2.5	2027 Exhaust PM10	2027 PM10D	2027 PM10 Total	2027 PM2.5 Total	2028 ROG	2028 NOx	2028 SO2	2028 Exhaust PM2.5	2028 Fugitive PM2.5	2028 Exhaust PM10	2028 PM10D	2028 PM10 Total	2028 PM2.5 Total
Site Preparation	Onsite	0.0020	0.0104	0.0002	0.0004	0.0158	0.0004	0.0307	0.0311	0.0162	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Site Preparation	Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Site Preparation	Vendor	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Site Preparation	Worker	0.0022	0.0020	0.0000	0.0000	0.0015	0.0000	0.0065	0.0065	0.0015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Grading	Onsite	0.0048	0.0332	0.0005	0.0009	0.0107	0.0009	0.0270	0.0279	0.0116	0.0144	0.0996	0.0014	0.0028	0.0321	0.0028	0.0809	0.0837	0.0349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Grading	Hauling	0.0003	0.0187	0.0001	0.0002	0.0011	0.0002	0.0038	0.0040	0.0012	0.0009	0.0542	0.0003	0.0006	0.0032	0.0006	0.0115	0.0121	0.0037	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Grading	Vendor	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000	0.0015	0.0000	0.0000	0.0001	0.0000	0.0003	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Grading	Worker	0.0041	0.0037	0.0000	0.0000	0.0028	0.0000	0.0122	0.0122	0.0028	0.0119	0.0109	0.0000	0.0000	0.0085	0.0000	0.0365	0.0365	0.0085	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete/Battery Placement	Onsite	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0354	0.3039	0.0025	0.0078	0.0000	0.0080	0.0000	0.0080	0.0078	0.0008	0.0070	0.0001	0.0002	0.0000	0.0002	0.0000	0.0002	0.0002
Concrete/Battery Placement	Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0036	0.2041	0.0011	0.0021	0.0119	0.0021	0.0433	0.0454	0.0140	0.0001	0.0046	0.0000	0.0000	0.0003	0.0000	0.0010	0.0011	0.0003
Concrete/Battery Placement	Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005	0.0310	0.0002	0.0003	0.0019	0.0003	0.0071	0.0074	0.0023	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0002	0.0002	0.0001
Concrete/Battery Placement	Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0569	0.0523	0.0000	0.0000	0.0409	0.0000	0.1748	0.1748	0.0409	0.0013	0.0011	0.0000	0.0000	0.0009	0.0000	0.0041	0.0041	0.0009
Paving	Onsite	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0013	0.0155	0.0001	0.0002	0.0000	0.0002	0.0000	0.0002	0.0002
Paving	Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000
Paving	Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0041	0.0034	0.0000	0.0000	0.0030	0.0000	0.0130	0.0130	0.0030

	ROG	NOx	SO2	Exhaust PM2.5	Fugitive PM2.5	Exhaust PM10	PM10D	PM10 Total	PM2.5 Total
MAX	0.1236	0.7573	0.0055	0.0136	0.0986	0.0138	0.3544	0.3682	0.1122
YEAR	2027	2027	2027	2027	2027	2027	2027	2027	2027

ANNUAL

Construction Road Segments - Haul Trucks

Road	Road Width (ft)	Road Width (m)	Base Elevation	SourceID	Line Volume Src Type	Cars Release Height from BAAQMD (m)	Trucks Release Height from BAAQMD (m)	Initial Lateral Dimension (m)	Cars Initial Vertical Dimension (m) from BAAQMD	Trucks Initial Vertical Dimension (m) from BAAQMD	# Volume Sources	Total Length (m)	g/s per vol (1 g/s)	Route	2027 Exhaust DPM (lb/yr)	2027 Total PM2.5 (lb/yr)	2027 Total PM2.5 (g/s/vol)	2027 NOx (lb/yr)	2027 SO2 (lb/yr)	2027 Total PM10 (lb/yr)	2027 NOx (g/s/vol)	2027 SO2 (g/s/vol)	2027 Total PM10 (g/s/vol)
Thomas Foon Chew Way	11.48	3.50	varies - AERMAP	CHEW	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	66	627.2	1.51515E-02	Inbound and Outbound	5.16E-02	3.44E-01	2.52948E-07	5.03E+00	2.71E-02	1.12E+00	3.6960E-06	1.9891E-08	8.2235E-07
Southbound on Zanker Road Part 1	14.76	4.50	varies - AERMAP	ZAS1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	114	9.09091E-02	Outbound	9.38E-03	6.26E-02	2.75855E-07	9.15E-01	4.92E-03	2.04E-01	4.0307E-06	2.1692E-08	8.9683E-07
Southbound on Zanker Road Part 2	11.48	3.50	varies - AERMAP	ZAS2	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	103	9.09091E-02	Outbound	8.47E-03	5.66E-02	2.49238E-07	8.27E-01	4.45E-03	1.84E-01	3.6417E-06	1.9599E-08	8.1029E-07
Westbound onramp to Southbay Freeway	14.76	4.50	varies - AERMAP	FYW1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	40	419.6	2.50000E-02	Outbound	3.45E-02	2.30E-01	2.79219E-07	3.37E+00	1.81E-02	7.49E-01	4.0798E-06	2.1957E-08	9.0776E-07
Southbound and Northbound on Zanker Road	49.21	15.00	varies - AERMAP	ZAS3	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	15	306.6	6.66667E-02	Inbound and Outbound	2.52E-02	1.68E-01	5.44064E-07	2.46E+00	1.32E-02	5.47E-01	7.9496E-06	4.2784E-08	1.7688E-06
Eastbound onramp to Southbay Freeway	13.12	4.00	varies - AERMAP	FYE1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	50	496.7	2.00000E-02	Outbound	4.09E-02	2.73E-01	2.64420E-07	3.99E+00	2.15E-02	8.87E-01	3.8636E-06	2.0793E-08	8.5965E-07
Southbay Freeway offramp heading west toward Zanker Road	13.12	4.00	varies - AERMAP	INW1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	60	604.1	1.66667E-02	Inbound	4.97E-02	3.32E-01	2.67995E-07	4.85E+00	2.61E-02	1.08E+00	3.9158E-06	2.1074E-08	8.7127E-07
Northbound on Zanker Road	11.48	3.50	varies - AERMAP	ZAN1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	20	186.4	5.00000E-02	Inbound	1.53E-02	1.02E-01	2.48076E-07	1.50E+00	8.05E-03	3.33E-01	3.6248E-06	1.9508E-08	8.0652E-07
Southbay Freeway offramp heading east toward Zanker Road	11.48	3.50	varies - AERMAP	FYE2	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	52	490	1.92308E-02	Inbound	4.03E-02	2.69E-01	2.50820E-07	3.93E+00	2.12E-02	8.75E-01	3.6649E-06	1.9724E-08	8.1543E-07

Route Length	2026-2028 meters	miles	
Inbound	1724.2	1.071368	Longest inbound
Outbound	1544.5	0.959708	Longest outbound
RT Distance Route (modeling domain)	3268.7	2.031076	Longest Route

Route % 100% r1

Total Hours/12 months of Construction 2600

ANNUAL

Construction Road Segments - Vendor

Road	Road Width (ft)	Road Width (m)	Base Elevation	SourceID	Line Volume Src Type	Cars Release Height from BAAQMD (m)	Trucks Release Height from BAAQMD (m)	Initial Lateral Dimension (m)	Cars Initial Vertical Dimension (m) from BAAQMD	Trucks Initial Vertical Dimension (m) from BAAQMD	# Volume Sources	Total Length (m)	g/s per vol (1 g/s)	Route	2027 Exhaust DPM (lb/yr)	2027 Total PM2.5 (lb/yr)	2027 Total PM2.5 (g/s/vol)	2027 NOx (lb/yr)	2027 SO2 (lb/yr)	2027 Total PM10 (lb/yr)	2027 NOx (g/s/vol)	2027 SO2 (g/s/vol)	2027 Total PM10 (g/s/vol)
Thomas Foon Chew Way	11.48	3.50	varies - AERMAP	CHEW	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	66	627.2	1.51515E-02	Inbound and Outbound	1.67E-02	1.11E-01	8.13819E-08	1.50E+00	8.55E-03	3.60E-01	1.1043E-06	6.2781E-09	2.6437E-07
Southbound on Zanker Road Part 1	14.76	4.50	varies - AERMAP	ZAS1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	114	9.09091E-02	Outbound	3.03E-03	2.01E-02	8.87519E-08	2.73E-01	1.55E-03	6.54E-02	1.2043E-06	6.8467E-09	2.8831E-07
Southbound on Zanker Road Part 2	11.48	3.50	varies - AERMAP	ZAS2	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	103	9.09091E-02	Outbound	2.74E-03	1.82E-02	8.01881E-08	2.47E-01	1.40E-03	5.91E-02	1.0881E-06	6.1861E-09	2.6049E-07
Westbound onramp to Southbay Freeway	14.76	4.50	varies - AERMAP	FYW1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	40	419.6	2.50000E-02	Outbound	1.11E-02	7.42E-02	8.98341E-08	1.01E+00	5.72E-03	2.41E-01	1.2190E-06	6.9302E-09	2.9182E-07
Southbound and Northbound on Zanker Road	49.21	15.00	varies - AERMAP	ZAS3	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	15	306.6	6.66667E-02	Inbound and Outbound	8.14E-03	5.42E-02	1.75044E-07	7.35E-01	4.18E-03	1.76E-01	2.3752E-06	1.3504E-08	5.6862E-07
Eastbound onramp to Southbay Freeway	13.12	4.00	varies - AERMAP	FYE1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	50	496.7	2.00000E-02	Outbound	1.32E-02	8.78E-02	8.50726E-08	1.19E+00	6.77E-03	2.85E-01	1.1544E-06	6.5629E-09	2.7636E-07
Southbay Freeway offramp heading west toward Zanker Road	13.12	4.00	varies - AERMAP	INW1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	60	604.1	1.66667E-02	Inbound	1.60E-02	1.07E-01	8.62230E-08	1.45E+00	8.24E-03	3.47E-01	1.1700E-06	6.6516E-09	2.8009E-07
Northbound on Zanker Road	11.48	3.50	varies - AERMAP	ZAN1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	20	186.4	5.00000E-02	Inbound	4.95E-03	3.29E-02	7.98145E-08	4.47E-01	2.54E-03	1.07E-01	1.0830E-06	6.1572E-09	2.5927E-07
Southbay Freeway offramp heading east toward Zanker Road	11.48	3.50	varies - AERMAP	FYE2	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	52	490	1.92308E-02	Inbound	1.30E-02	8.66E-02	8.06972E-08	1.17E+00	6.68E-03	2.81E-01	1.0950E-06	6.2253E-09	2.6214E-07

Route Length	2026-2028 meters	2026-2028 miles	
Inbound	1724.2	1.071368	Longest inbound
Outbound	1544.5	0.959708	Longest outbound
RT Distance Route (modeling domain)	3268.7	2.031076	Longest Route

Route %: 100% r1

Total Hours/12 months of Construction: 2600

ANNUAL

Construction Road Segments - Worker Vehicles

Road	Road Width (ft)	Road Width (m)	Base Elevation	SourceID	Line Volume Src Type	Cars Release Height from BAAQMD (m)	Trucks Release Height from BAAQMD (m)	Initial Lateral Dimension (m)	Cars Initial Vertical Dimension (m) from BAAQMD	Trucks Initial Vertical Dimension (m) from BAAQMD	# Volume Sources	Total Length (m)	g/s per vol (1 g/s)	Route	2027 Exhaust DPM (lb/yr)	2027 Total PM2.5 (lb/yr)	2027 Total PM2.5 (g/s/vol)	2027 ROG (ton/yr)	2027 NOx (lb/yr)	2027 SO2 (lb/yr)	2027 Total PM10 (lb/yr)	2027 NOx (g/s/vol)	2027 SO2 (g/s/vol)	2027 Total PM10 (g/s/vol)
Thomas Foon Chew Way	11.48	3.50	varies - AERMAP	CHEW_C	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	66	627.2	1.51515E-02	Inbound and Outbound	0.00E+00	1.65E+00	1.20930E-06	1.15E-03	2.10E+00	0.00E+00	7.04E+00	1.5449E-06	0.0000E+00	5.1661E-06
Southbound on Zanker Road Part 1	14.76	4.50	varies - AERMAP	ZAS1_C	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	114	9.09091E-02	Outbound	0.00E+00	2.99E-01	1.31882E-06	2.08E-04	3.82E-01	0.00E+00	1.28E+00	1.6848E-06	0.0000E+00	5.6340E-06
Southbound on Zanker Road Part 2	11.48	3.50	varies - AERMAP	ZAS2_C	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	103	9.09091E-02	Outbound	0.00E+00	2.70E-01	1.19156E-06	1.88E-04	3.46E-01	0.00E+00	1.16E+00	1.5223E-06	0.0000E+00	5.0904E-06
Westbound onramp to Southbay Freeway	14.76	4.50	varies - AERMAP	FYW1_C	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	40	419.6	2.50000E-02	Outbound	0.00E+00	1.10E+00	1.33490E-06	7.67E-04	1.41E+00	0.00E+00	4.71E+00	1.7054E-06	0.0000E+00	5.7027E-06
Southbound and Northbound on Zanker Road	49.21	15.00	varies - AERMAP	ZAS3_C	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	15	306.6	6.66667E-02	Inbound and Outbound	0.00E+00	8.05E-01	2.60107E-06	5.60E-04	1.03E+00	0.00E+00	3.44E+00	3.3230E-06	0.0000E+00	1.1112E-05
Eastbound onramp to Southbay Freeway	13.12	4.00	varies - AERMAP	FYE1_C	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	50	496.7	2.00000E-02	Outbound	0.00E+00	1.30E+00	1.26414E-06	9.07E-04	1.67E+00	0.00E+00	5.57E+00	1.6150E-06	0.0000E+00	5.4004E-06
Southbay Freeway offramp heading west toward Zanker Road	13.12	4.00	varies - AERMAP	INW1_C	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	60	604.1	1.66667E-02	Inbound	0.00E+00	1.59E+00	1.28124E-06	1.10E-03	2.03E+00	0.00E+00	6.78E+00	1.6368E-06	0.0000E+00	5.4735E-06
Northbound on Zanker Road	11.48	3.50	varies - AERMAP	ZAN1_C	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	20	186.4	5.00000E-02	Inbound	0.00E+00	4.89E-01	1.18601E-06	3.41E-04	6.25E-01	0.00E+00	2.09E+00	1.5152E-06	0.0000E+00	5.0666E-06
Southbay Freeway offramp heading east toward Zanker Road	11.48	3.50	varies - AERMAP	FYE2_C	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	52	490	1.92308E-02	Inbound	0.00E+00	1.29E+00	1.19913E-06	8.95E-04	1.64E+00	0.00E+00	5.50E+00	1.5319E-06	0.0000E+00	5.1227E-06

Route Length	2026-2028 meters	miles	
Inbound	1724.2	1.071368	Longest inbound
Outbound	1544.5	0.959708	Longest outbound
RT Distance Route (modeling domain)	3268.7	2.031076	Longest Route

Route % 100% r1

Total Hours/12 months of Construction 2600

CONSTRUCTION YEAR 2027										
Toxic Compounds (lb/yr)	EMFAC Gasoline TOG Speciation	Thomas Foon Chew Way	Southbound on Zanker Road Part 1	Southbound on Zanker Road Part 2	Westbound onramp to Southbay Freeway	Southbound and Northbound on Zanker Road	Eastbound onramp to Southbay Freeway	Southbay Freeway offramp heading west toward Zanker Road	Northbound on Zanker Road	Southbay Freeway offramp heading east toward Zanker Road
	(% of TOG)	CHEW_C	ZAS1_C	ZAS2_C	FYW1_C	ZAS3_C	FYE1_C	INW1_C	ZAN1_C	FYE2_C
Acetaldehyde	0.28%	7.51E-03	1.36E-03	1.23E-03	5.02E-03	3.67E-03	5.94E-03	7.23E-03	2.23E-03	5.86E-03
Acrolein	0.13%	3.49E-03	6.33E-04	5.72E-04	2.33E-03	1.70E-03	2.76E-03	3.36E-03	1.04E-03	2.72E-03
Benzene	2.47%	6.62E-02	1.20E-02	1.09E-02	4.43E-02	3.24E-02	5.24E-02	6.38E-02	1.97E-02	5.17E-02
1,3-Butadiene	0.55%	1.47E-02	2.68E-03	2.42E-03	9.86E-03	7.21E-03	1.17E-02	1.42E-02	4.38E-03	1.15E-02
Ethylbenzene	1.05%	2.81E-02	5.12E-03	4.62E-03	1.88E-02	1.38E-02	2.23E-02	2.71E-02	8.37E-03	2.20E-02
Formaldehyde	1.58%	4.24E-02	7.70E-03	6.96E-03	2.83E-02	2.07E-02	3.35E-02	4.08E-02	1.26E-02	3.31E-02
Hexane	1.60%	4.29E-02	7.80E-03	7.04E-03	2.87E-02	2.10E-02	3.40E-02	4.13E-02	1.27E-02	3.35E-02
Methanol	0.12%	3.22E-03	5.85E-04	5.28E-04	2.15E-03	1.57E-03	2.55E-03	3.10E-03	9.56E-04	2.51E-03
Methyl Ethyl Ketone	0.02%	5.36E-04	9.75E-05	8.80E-05	3.59E-04	2.62E-04	4.25E-04	5.16E-04	1.59E-04	4.19E-04
Naphthalene	0.05%	1.34E-03	2.44E-04	2.20E-04	8.97E-04	6.55E-04	1.06E-03	1.29E-03	3.98E-04	1.05E-03
Propylene	3.06%	8.20E-02	1.49E-02	1.35E-02	5.49E-02	4.01E-02	6.50E-02	7.90E-02	2.44E-02	6.41E-02
Styrene	0.12%	3.22E-03	5.85E-04	5.28E-04	2.15E-03	1.57E-03	2.55E-03	3.10E-03	9.56E-04	2.51E-03
Toluene	5.76%	1.54E-01	2.81E-02	2.54E-02	1.03E-01	7.55E-02	1.22E-01	1.49E-01	4.59E-02	1.21E-01
Xylenes	4.80%	1.29E-01	2.34E-02	2.11E-02	8.61E-02	6.29E-02	1.02E-01	1.24E-01	3.82E-02	1.01E-01

Construction Hours 2600 hours/year

lb/hr	(% of TOG)	CHEW_C	ZAS1_C	ZAS2_C	FYW1_C	ZAS3_C	FYE1_C	INW1_C	ZAN1_C	FYE2_C
Acetaldehyde	0.28%	2.89E-06	5.25E-07	4.74E-07	1.93E-06	1.41E-06	2.29E-06	2.78E-06	8.58E-07	2.26E-06
Acrolein	0.13%	1.34E-06	2.44E-07	2.20E-07	8.97E-07	6.55E-07	1.06E-06	1.29E-06	3.98E-07	1.05E-06
Benzene	2.47%	2.55E-05	4.63E-06	4.18E-06	1.70E-05	1.24E-05	2.02E-05	2.45E-05	7.57E-06	1.99E-05
1,3-Butadiene	0.55%	5.67E-06	1.03E-06	9.31E-07	3.79E-06	2.77E-06	4.49E-06	5.46E-06	1.69E-06	4.43E-06
Ethylbenzene	1.05%	1.08E-05	1.97E-06	1.78E-06	7.24E-06	5.29E-06	8.57E-06	1.04E-05	3.22E-06	8.46E-06
Formaldehyde	1.58%	1.63E-05	2.96E-06	2.68E-06	1.09E-05	7.96E-06	1.29E-05	1.57E-05	4.84E-06	1.27E-05
Hexane	1.60%	1.65E-05	3.00E-06	2.71E-06	1.10E-05	8.06E-06	1.31E-05	1.59E-05	4.90E-06	1.29E-05
Methanol	0.12%	1.24E-06	2.25E-07	2.03E-07	8.28E-07	6.05E-07	9.80E-07	1.19E-06	3.68E-07	9.67E-07
Methyl Ethyl Ketone	0.02%	2.06E-07	3.75E-08	3.39E-08	1.38E-07	1.01E-07	1.63E-07	1.99E-07	6.13E-08	1.61E-07
Naphthalene	0.05%	5.16E-07	9.37E-08	8.47E-08	3.45E-07	2.52E-07	4.08E-07	4.97E-07	1.53E-07	4.03E-07
Propylene	3.06%	3.16E-05	5.73E-06	5.18E-06	2.11E-05	1.54E-05	2.50E-05	3.04E-05	9.38E-06	2.46E-05
Styrene	0.12%	1.24E-06	2.25E-07	2.03E-07	8.28E-07	6.05E-07	9.80E-07	1.19E-06	3.68E-07	9.67E-07
Toluene	5.76%	5.94E-05	1.08E-05	9.75E-06	3.97E-05	2.90E-05	4.70E-05	5.72E-05	1.77E-05	4.64E-05
Xylenes	4.80%	4.95E-05	9.00E-06	8.13E-06	3.31E-05	2.42E-05	3.92E-05	4.77E-05	1.47E-05	3.87E-05

ANNUAL ONSITE EMISSIONS

Ref Name	Activity Duration (Months of Year) 2027	SRC ID	VOL	Chi/Q	2026 DPM (lb/yr)	2027 DPM (lb/yr)	2028 DPM (lb/yr)	2027 Exhaust PM2.5 (g/s/vol)	2027 NOx (g/s/vol)	2027 SO2 (g/s/vol)	2027 Exhaust PM10 (g/s/vol)
Onsite Construciton	11	Onsite	142	7.04225E-03	2.657E+00	2.165E+01	8.206E-01	2.6524E-06	9.6652E-05	1.2071E-06	2.6726E-06

Ref Name			SRC ID	AERMOD Area (m²)	2026 Fugitive PM2.5 (g/s/m²)	2027 Fugitive PM2.5 (g/s/m²)	2028 Fugitive PM2.5 (g/s/m²)	2027 Fugitive PM10 (g/s/m²)
Onsite			AREA_UTL	56929.0	2.69809E-07	5.95676E-08		1.50199E-07

Units: LBS/DAY		2027									
		2027	2027	2027	2027	2027	2027	2027	2027	2027	2027
Construction Phase		ROG	NOx	CO	SO2	Exhaust PM2.5	Fugitive PM2.5	Exhaust PM10	PM10D	PM10 Total	PM2.5 Total
Site Preparation	Onsite	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Site Preparation	Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Site Preparation	Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Site Preparation	Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Grading	Onsite	0.3817	3.0915	18.3455	0.0298	0.0809	0.2458	0.0830	0.6199	0.7028	0.3267
Grading	Hauling	0.0345	1.9795	0.9608	0.0107	0.0203	0.1152	0.0203	0.4201	0.4404	0.1355
Grading	Vendor	0.0039	0.2484	0.1158	0.0014	0.0028	0.0156	0.0028	0.0567	0.0595	0.0183
Grading	Worker	0.5272	0.4840	6.0160	0.0000	0.0000	0.3789	0.0000	1.6186	1.6186	0.3789
Concrete/Battery Placement	Onsite	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete/Battery Placement	Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete/Battery Placement	Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete/Battery Placement	Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	Onsite	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Daily

Construction Road Segments - Haul Trucks

2027

Road	Road Width (ft)	Road Width (m)	Base Elevation	SourceID	Line Volume Src Type	Cars Release Height from BAAQMD (m)	Trucks Release Height from BAAQMD (m)	Initial Lateral Dimension (m)	Cars Initial Vertical Dimension (m) from BAAQMD	Trucks Initial Vertical Dimension (m) from BAAQMD	# Volume Sources	Total Length (m)	g/s per vol (1 g/s)	Route	Total PM10 (lb/day)	Total PM2.5 (lb/day)	NO2 (lb/day)	CO (lb/day)	SO2 (lb/day)	Total PM10 (g/s/vol)	Total PM2.5 (g/s/vol)	NO2 (g/s/vol)	CO (g/s/vol)	SO2 (g/s/vol)
Thomas Foon Chew Way	11.48	3.50	varies - AERMAP	CHEW	Adjacent	1.3	3.4	varies - based on	1.21	3.16	66	627.2	1.51515E-02	Inbound and Outbound	4.29E-03	1.32E-03	1.93E-02	9.36E-03	1.04E-04	3.41E-07	1.05E-07	1.53E-06	7.45E-07	8.26E-09
Southbound on Zanker Road Part 1	14.76	4.50	varies - AERMAP	ZAS1	Adjacent	1.3	3.4	varies - based on	1.21	3.16	11	114	9.09091E-02	Outbound	7.80E-04	2.40E-04	3.51E-03	1.70E-03	1.89E-05	3.72E-07	1.15E-07	1.67E-06	8.12E-07	9.00E-09
Southbound on Zanker Road Part 2	11.48	3.50	varies - AERMAP	ZAS2	Adjacent	1.3	3.4	varies - based on	1.21	3.16	11	103	9.09091E-02	Outbound	7.05E-04	2.17E-04	3.17E-03	1.54E-03	1.70E-05	3.36E-07	1.03E-07	1.51E-06	7.34E-07	8.14E-09
Westbound onramp to Southbay Freeway	14.76	4.50	varies - AERMAP	FYW1	Adjacent	1.3	3.4	varies - based on	1.21	3.16	40	419.6	2.50000E-02	Outbound	2.87E-03	8.83E-04	1.29E-02	6.26E-03	6.94E-05	3.77E-07	1.16E-07	1.69E-06	8.22E-07	9.11E-09
Southbound and Northbound on Zanker Road	49.21	15.00	varies - AERMAP	ZAS3	Adjacent	1.3	3.4	varies - based on	1.21	3.16	15	306.6	6.66667E-02	Inbound and Outbound	2.10E-03	6.45E-04	9.43E-03	4.58E-03	5.07E-05	7.34E-07	2.26E-07	3.30E-06	1.60E-06	1.78E-08
Eastbound onramp to Southbay Freeway	13.12	4.00	varies - AERMAP	FYE1	Adjacent	1.3	3.4	varies - based on	1.21	3.16	50	496.7	2.00000E-02	Outbound	3.40E-03	1.05E-03	1.53E-02	7.41E-03	8.22E-05	3.57E-07	1.10E-07	1.60E-06	7.78E-07	8.63E-09
Southbay Freeway offramp heading west toward Zanker Road	13.12	4.00	varies - AERMAP	INW1	Adjacent	1.3	3.4	varies - based on	1.21	3.16	60	604.1	1.66667E-02	Inbound	4.13E-03	1.27E-03	1.86E-02	9.02E-03	1.00E-04	3.62E-07	1.11E-07	1.63E-06	7.89E-07	8.75E-09
Northbound on Zanker Road	11.48	3.50	varies - AERMAP	ZAN1	Adjacent	1.3	3.4	varies - based on	1.21	3.16	20	186.4	5.00000E-02	Inbound	1.28E-03	3.92E-04	5.73E-03	2.78E-03	3.08E-05	3.35E-07	1.03E-07	1.50E-06	7.30E-07	8.10E-09
Southbay Freeway offramp heading east toward Zanker Road	11.48	3.50	varies - AERMAP	FYE2	Adjacent	1.3	3.4	varies - based on	1.21	3.16	52	490	1.92308E-02	Inbound	3.35E-03	1.03E-03	1.51E-02	7.31E-03	8.11E-05	3.38E-07	1.04E-07	1.52E-06	7.38E-07	8.19E-09

Route Length	2026-2028 meters	miles	
Inbound	1724.2	1.071368	Longest inbound
Outbound	1544.5	0.959708	Longest outbound
RT Distance Route (modeling domain)	3268.7	2.031076	Longest Route

Route % 100% r1

Daily

Construction Road Segments - Vendor

2027

Road	Road Width (ft)	Road Width (m)	Base Elevation	SourceID	Line Volume Src Type	Cars Release Height from BAAQMD (m)	Trucks Release Height from BAAQMD (m)	Initial Lateral Dimension (m)	Cars Initial Vertical Dimension (m) from BAAQMD	Trucks Initial Vertical Dimension (m) from BAAQMD	# Volume Sources	Total Length (m)	g/s per vol (1 g/s)	Route	Total PM10 (lb/day)	Total PM2.5 (lb/day)	NO2 (lb/day)	CO (lb/day)	SO2 (lb/day)	Total PM10 (g/s/vol)	Total PM2.5 (g/s/vol)	NO2 (g/s/vol)	CO (g/s/vol)	SO2 (g/s/vol)
Thomas Foon Chew Way	11.48	3.50	varies - AERMAP	CHEW	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	66	627.2	1.51515E-02	Inbound and Outbound	1.38E-03	4.25E-04	5.76E-03	2.69E-03	3.28E-05	1.10E-07	3.38E-08	4.58E-07	2.14E-07	2.61E-09
Southbound on Zanker Road Part 1	14.76	4.50	varies - AERMAP	ZAS1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	114	9.09091E-02	Outbound	2.51E-04	7.72E-05	1.05E-03	4.88E-04	5.95E-06	1.20E-07	3.68E-08	5.00E-07	2.33E-07	2.84E-09
Southbound on Zanker Road Part 2	11.48	3.50	varies - AERMAP	ZAS2	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	103	9.09091E-02	Outbound	2.27E-04	6.97E-05	9.46E-04	4.41E-04	5.38E-06	1.08E-07	3.33E-08	4.52E-07	2.11E-07	2.57E-09
Westbound onramp to Southbay Freeway	14.76	4.50	varies - AERMAP	FYW1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	40	419.6	2.50000E-02	Outbound	9.23E-04	2.84E-04	3.85E-03	1.80E-03	2.19E-05	1.21E-07	3.73E-08	5.06E-07	2.36E-07	2.88E-09
Southbound and Northbound on Zanker Road	49.21	15.00	varies - AERMAP	ZAS3	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	15	306.6	6.66667E-02	Inbound and Outbound	6.74E-04	2.08E-04	2.82E-03	1.31E-03	1.60E-05	2.36E-07	7.27E-08	9.86E-07	4.60E-07	5.60E-09
Eastbound onramp to Southbay Freeway	13.12	4.00	varies - AERMAP	FYE1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	50	496.7	2.00000E-02	Outbound	1.09E-03	3.36E-04	4.56E-03	2.13E-03	2.59E-05	1.15E-07	3.53E-08	4.79E-07	2.23E-07	2.72E-09
Southbay Freeway offramp heading west toward Zanker Road	13.12	4.00	varies - AERMAP	INW1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	60	604.1	1.66667E-02	Inbound	1.33E-03	4.09E-04	5.55E-03	2.59E-03	3.16E-05	1.16E-07	3.58E-08	4.86E-07	2.26E-07	2.76E-09
Northbound on Zanker Road	11.48	3.50	varies - AERMAP	ZAN1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	20	186.4	5.00000E-02	Inbound	4.10E-04	1.26E-04	1.71E-03	7.99E-04	9.74E-06	1.08E-07	3.31E-08	4.50E-07	2.10E-07	2.56E-09
Southbay Freeway offramp heading east toward Zanker Road	11.48	3.50	varies - AERMAP	FYE2	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	52	490	1.92308E-02	Inbound	1.08E-03	3.32E-04	4.50E-03	2.10E-03	2.56E-05	1.09E-07	3.35E-08	4.54E-07	2.12E-07	2.58E-09

	2026-2028		
Route Length	meters	miles	
Inbound	1724.2	1.071368	Longest inbound
Outbound	1544.5	0.959708	Longest outbound
RT Distance Route (modeling domain)	3268.7	2.031076	Longest Route

Route % 100% r1

Daily

Construction Road Segments - Worker Vehicles

2027

Road	Road Width (ft)	Road Width (m)	Base Elevation	SourceID	Line Volume Src Type	Cars Release Height from BAAQMD (m)	Trucks Release Height from BAAQMD (m)	Initial Lateral Dimension (m)	Cars Initial Vertical Dimension (m) from BAAQMD	Trucks Initial Vertical Dimension (m) from BAAQMD	# Volume Sources	Total Length (m)	g/s per vol (1 g/s)	Route	Total PM10 (lb/day)	Total PM2.5 (lb/day)	NO2 (lb/day)	CO (lb/day)	SO2 (lb/day)	Total PM10 (g/s/vol)	Total PM2.5 (g/s/vol)	NO2 (g/s/vol)	CO (g/s/vol)	SO2 (g/s/vol)
Thomas Foon Chew Way	11.48	3.50	varies - AERMAP	CHEW	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	66	627.2	1.51515E-02	Inbound and Outbound	2.70E-02	6.31E-03	8.06E-03	1.00E-01	0.00E+00	2.14E-06	5.02E-07	6.41E-07	7.97E-06	0.00E+00
Southbound on Zanker Road Part 1	14.76	4.50	varies - AERMAP	ZAS1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	114	9.09091E-02	Outbound	4.90E-03	1.15E-03	1.47E-03	1.82E-02	0.00E+00	2.34E-06	5.47E-07	6.99E-07	8.69E-06	0.00E+00
Southbound on Zanker Road Part 2	11.48	3.50	varies - AERMAP	ZAS2	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	103	9.09091E-02	Outbound	4.43E-03	1.04E-03	1.32E-03	1.65E-02	0.00E+00	2.11E-06	4.95E-07	6.32E-07	7.85E-06	0.00E+00
Westbound onramp to Southbay Freeway	14.76	4.50	varies - AERMAP	FYW1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	40	419.6	2.50000E-02	Outbound	1.80E-02	4.22E-03	5.39E-03	6.70E-02	0.00E+00	2.37E-06	5.54E-07	7.08E-07	8.80E-06	0.00E+00
Southbound and Northbound on Zanker Road	49.21	15.00	varies - AERMAP	ZAS3	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	15	306.6	6.66667E-02	Inbound and Outbound	1.32E-02	3.08E-03	3.94E-03	4.90E-02	0.00E+00	4.61E-06	1.08E-06	1.38E-06	1.71E-05	0.00E+00
Eastbound onramp to Southbay Freeway	13.12	4.00	varies - AERMAP	FYE1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	50	496.7	2.00000E-02	Outbound	2.13E-02	5.00E-03	6.38E-03	7.93E-02	0.00E+00	2.24E-06	5.25E-07	6.70E-07	8.33E-06	0.00E+00
Southbay Freeway offramp heading west toward Zanker Road	13.12	4.00	varies - AERMAP	INW1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	60	604.1	1.66667E-02	Inbound	2.60E-02	6.08E-03	7.76E-03	9.65E-02	0.00E+00	2.27E-06	5.32E-07	6.79E-07	8.44E-06	0.00E+00
Northbound on Zanker Road	11.48	3.50	varies - AERMAP	ZAN1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	20	186.4	5.00000E-02	Inbound	8.01E-03	1.88E-03	2.40E-03	2.98E-02	0.00E+00	2.10E-06	4.92E-07	6.29E-07	7.82E-06	0.00E+00
Southbay Freeway offramp heading east toward Zanker Road	11.48	3.50	varies - AERMAP	FYE2	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	52	490	1.92308E-02	Inbound	2.11E-02	4.93E-03	6.30E-03	7.83E-02	0.00E+00	2.13E-06	4.98E-07	6.36E-07	7.90E-06	0.00E+00

	2026-2028		
Route Length	meters	miles	
Inbound	1724.2	1.071368	Longest inbound
Outbound	1544.5	0.959708	Longest outbound
RT Distance Route (modeling domain)	3268.7	2.031076	Longest Route

Route % 100% r1

DAILY ONSITE EMISSIONS

Ref Name	SRC ID	2027 Exhaust PM2.5 (g/s/vol)
Onsite Construction	Onsite	7.18E-06

2027 NOx (g/s/vol)	2027 CO (g/s/vol)	2027 SO2 (g/s/vol)	2027 Exhaust PM10 (g/s/vol)
2.74E-04	1.63E-03	2.65E-06	7.36E-06

SRC ID	AERMOD Area (m^2)	2027 Fugitive PM2.5 ($g/s/m^2$)	2027 Fugitive PM10 ($g/s/m^2$)
AREA_UTL	56929.0	5.44096E-08	1.37193E-07

Units: LBS/HR		2027									
		2027	2027	2027	2027	2027	2027	2027	2027	2027	2027
Construction Phase		ROG	NOx	CO	SO2	Exhaust PM2.5	Fugitive PM2.5	Exhaust PM10	PM10D	PM10 Total	PM2.5 Total
Site Preparation	Onsite	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Site Preparation	Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Site Preparation	Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Site Preparation	Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Grading	Onsite	0.0477	0.3864	2.2932	0.0037	0.0101	0.0307	0.0104	0.0775	0.0879	0.0408
Grading	Hauling	0.0043	0.2474	0.1201	0.0013	0.0025	0.0144	0.0025	0.0525	0.0551	0.0169
Grading	Vendor	0.0005	0.0310	0.0145	0.0002	0.0003	0.0019	0.0003	0.0071	0.0074	0.0023
Grading	Worker	0.0659	0.0605	0.7520	0.0000	0.0000	0.0474	0.0000	0.2023	0.2023	0.0474
Concrete/Battery Placement	Onsite	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete/Battery Placement	Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete/Battery Placement	Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete/Battery Placement	Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	Onsite	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Hourly

Construction Road Segments - Haul Trucks

2027

Road	Road Width (ft)	Road Width (m)	Base Elevation	SourceID	Line Volume Src Type	Cars Release Height from BAAQMD (m)	Trucks Release Height from BAAQMD (m)	Initial Lateral Dimension (m)	Cars Initial Vertical Dimension (m) from BAAQMD	Trucks Initial Vertical Dimension (m) from BAAQMD	# Volume Sources	Total Length (m)	g/s per vol (1 g/s)	Route	Total PM10 (lb/hr)	Total PM2.5 (lb/hr)	NO2 (lb/hr)	CO (lb/hr)	SO2 (lb/hr)	Total PM10 (g/s/vol)	Total PM2.5 (g/s/vol)	NO2 (g/s/vol)	CO (g/s/vol)	SO2 (g/s/vol)
Thomas Foon Chew Way	11.48	3.50	varies - AERMAP	CHEW	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	66	627.2	1.51515E-02	Inbound and Outbound	5.36E-04	1.65E-04	2.41E-03	1.17E-03	1.30E-05	1.02E-06	3.15E-07	4.60E-06	2.23E-06	2.48E-08
Southbound on Zanker Road Part 1	14.76	4.50	varies - AERMAP	ZAS1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	114	9.09091E-02	Outbound	9.75E-05	3.00E-05	4.38E-04	2.13E-04	2.36E-06	1.12E-06	3.44E-07	5.02E-06	2.44E-06	2.70E-08
Southbound on Zanker Road Part 2	11.48	3.50	varies - AERMAP	ZAS2	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	103	9.09091E-02	Outbound	8.81E-05	2.71E-05	3.96E-04	1.92E-04	2.13E-06	1.01E-06	3.10E-07	4.53E-06	2.20E-06	2.44E-08
Westbound onramp to Southbay Freeway	14.76	4.50	varies - AERMAP	FYW1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	40	419.6	2.50000E-02	Outbound	3.59E-04	1.10E-04	1.61E-03	7.83E-04	8.68E-06	1.13E-06	3.48E-07	5.08E-06	2.47E-06	2.73E-08
Southbound and Northbound on Zanker Road	49.21	15.00	varies - AERMAP	ZAS3	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	15	306.6	6.66667E-02	Inbound and Outbound	2.62E-04	8.07E-05	1.18E-03	5.72E-04	6.34E-06	2.20E-06	6.77E-07	9.90E-06	4.80E-06	5.33E-08
Eastbound onramp to Southbay Freeway	13.12	4.00	varies - AERMAP	FYE1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	50	496.7	2.00000E-02	Outbound	4.25E-04	1.31E-04	1.91E-03	9.27E-04	1.03E-05	1.07E-06	3.29E-07	4.81E-06	2.34E-06	2.59E-08
Southbay Freeway offramp heading west toward Zanker Road	13.12	4.00	varies - AERMAP	INW1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	60	604.1	1.66667E-02	Inbound	5.17E-04	1.59E-04	2.32E-03	1.13E-03	1.25E-05	1.08E-06	3.34E-07	4.88E-06	2.37E-06	2.62E-08
Northbound on Zanker Road	11.48	3.50	varies - AERMAP	ZAN1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	20	186.4	5.00000E-02	Inbound	1.59E-04	4.90E-05	7.16E-04	3.48E-04	3.86E-06	1.00E-06	3.09E-07	4.51E-06	2.19E-06	2.43E-08
Southbay Freeway offramp heading east toward Zanker Road	11.48	3.50	varies - AERMAP	FYE2	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	52	490	1.92308E-02	Inbound	4.19E-04	1.29E-04	1.88E-03	9.14E-04	1.01E-05	1.02E-06	3.12E-07	4.56E-06	2.22E-06	2.46E-08

	2026-2028		
Route Length	meters	miles	
Inbound	1724.2	1.071368	Longest inbound
Outbound	1544.5	0.959708	Longest outbound
RT Distance Route (modeling domain)	3268.7	2.031076	Longest Route

Route % 100% r1

Hourly

Construction Road Segments - Vendor

2027

Road	Road Width (ft)	Road Width (m)	Base Elevation	SourceID	Line Volume Src Type	Cars Release Height from BAAQMD (m)	Trucks Release Height from BAAQMD (m)	Initial Lateral Dimension (m)	Cars Initial Vertical Dimension (m) from BAAQMD	Trucks Initial Vertical Dimension (m) from BAAQMD	# Volume Sources	Total Length (m)	g/s per vol (1 g/s)	Route	Total PM10 (lb/hr)	Total PM2.5 (lb/hr)	NO2 (lb/hr)	CO (lb/hr)	SO2 (lb/hr)	Total PM10 (g/s/vol)	Total PM2.5 (g/s/vol)	NO2 (g/s/vol)	CO (g/s/vol)	SO2 (g/s/vol)
Thomas Foon Chew Way	11.48	3.50	varies - AERMAP	CHEW	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	66	627.2	1.51515E-02	Inbound and Outbound	1.72E-04	5.31E-05	7.20E-04	3.36E-04	4.10E-06	3.29E-07	1.01E-07	1.38E-06	6.41E-07	7.82E-09
Southbound on Zanker Road Part 1	14.76	4.50	varies - AERMAP	ZAS1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	114	9.09091E-02	Outbound	3.13E-05	9.65E-06	1.31E-04	6.11E-05	7.44E-07	3.59E-07	1.11E-07	1.50E-06	6.99E-07	8.53E-09
Southbound on Zanker Road Part 2	11.48	3.50	varies - AERMAP	ZAS2	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	11	103	9.09091E-02	Outbound	2.83E-05	8.72E-06	1.18E-04	5.52E-05	6.72E-07	3.24E-07	9.99E-08	1.35E-06	6.32E-07	7.70E-09
Westbound onramp to Southbay Freeway	14.76	4.50	varies - AERMAP	FYW1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	40	419.6	2.50000E-02	Outbound	1.15E-04	3.55E-05	4.82E-04	2.25E-04	2.74E-06	3.63E-07	1.12E-07	1.52E-06	7.08E-07	8.63E-09
Southbound and Northbound on Zanker Road	49.21	15.00	varies - AERMAP	ZAS3	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	15	306.6	6.66667E-02	Inbound and Outbound	8.43E-05	2.59E-05	3.52E-04	1.64E-04	2.00E-06	7.08E-07	2.18E-07	2.96E-06	1.38E-06	1.68E-08
Eastbound onramp to Southbay Freeway	13.12	4.00	varies - AERMAP	FYE1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	50	496.7	2.00000E-02	Outbound	1.37E-04	4.20E-05	5.70E-04	2.66E-04	3.24E-06	3.44E-07	1.06E-07	1.44E-06	6.70E-07	8.17E-09
Southbay Freeway offramp heading west toward Zanker Road	13.12	4.00	varies - AERMAP	INW1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	60	604.1	1.66667E-02	Inbound	1.66E-04	5.11E-05	6.94E-04	3.24E-04	3.94E-06	3.49E-07	1.07E-07	1.46E-06	6.79E-07	8.28E-09
Northbound on Zanker Road	11.48	3.50	varies - AERMAP	ZAN1	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	20	186.4	5.00000E-02	Inbound	5.12E-05	1.58E-05	2.14E-04	9.98E-05	1.22E-06	3.23E-07	9.94E-08	1.35E-06	6.29E-07	7.67E-09
Southbay Freeway offramp heading east toward Zanker Road	11.48	3.50	varies - AERMAP	FYE2	Adjacent	1.3	3.4	varies - based on plume width	1.21	3.16	52	490	1.92308E-02	Inbound	1.35E-04	4.15E-05	5.63E-04	2.62E-04	3.20E-06	3.26E-07	1.00E-07	1.36E-06	6.36E-07	7.75E-09

	2026-2028		
Route Length	meters	miles	
Inbound	1724.2	1.071368	Longest inbound
Outbound	1544.5	0.959708	Longest outbound
RT Distance Route (modeling domain)	3268.7	2.031076	Longest Route

Route % 100% r1

Hourly

Construction Road Segments - Worker Vehicles

2027

Road	Road Width (ft)	Road Width (m)	Base Elevation	SourceID	Line Volume Src Type	Cars Release Height from BAAQMD (m)	Trucks Release Height from BAAQMD (m)	Initial Lateral Dimension (m)	Cars Initial Vertical Dimension (m) from BAAQMD	Trucks Initial Vertical Dimension (m) from BAAQMD	# Volume Sources	Total Length (m)	g/s per vol (1 g/s)	Route	Total PM10 (lb/hr)	Total PM2.5 (lb/hr)	NO2 (lb/hr)	CO (lb/hr)	SO2 (lb/hr)	Total PM10 (g/s/vol)	Total PM2.5 (g/s/vol)	NO2 (g/s/vol)	CO (g/s/vol)	SO2 (g/s/vol)
Thomas Foon Chew Way	11.48	3.50	varies - AERMAP	CHEW	Adjacent	1.3	3.4	varies - based on	1.21	3.16	66	627.2	1.51515E-02	Inbound and Outbound	3.37E-03	7.89E-04	1.01E-03	1.25E-02	0.00E+00	6.43E-06	1.51E-06	1.92E-06	2.39E-05	0.00E+00
Southbound on Zanker Road Part 1	14.76	4.50	varies - AERMAP	ZAS1	Adjacent	1.3	3.4	varies - based on	1.21	3.16	11	114	9.09091E-02	Outbound	6.12E-04	1.43E-04	1.83E-04	2.28E-03	0.00E+00	7.02E-06	1.64E-06	2.10E-06	2.61E-05	0.00E+00
Southbound on Zanker Road Part 2	11.48	3.50	varies - AERMAP	ZAS2	Adjacent	1.3	3.4	varies - based on	1.21	3.16	11	103	9.09091E-02	Outbound	5.53E-04	1.30E-04	1.65E-04	2.06E-03	0.00E+00	6.34E-06	1.48E-06	1.90E-06	2.36E-05	0.00E+00
Westbound onramp to Southbay Freeway	14.76	4.50	varies - AERMAP	FYW1	Adjacent	1.3	3.4	varies - based on	1.21	3.16	40	419.6	2.50000E-02	Outbound	2.25E-03	5.28E-04	6.74E-04	8.38E-03	0.00E+00	7.10E-06	1.66E-06	2.12E-06	2.64E-05	0.00E+00
Southbound and Northbound on Zanker Road	49.21	15.00	varies - AERMAP	ZAS3	Adjacent	1.3	3.4	varies - based on	1.21	3.16	15	306.6	6.66667E-02	Inbound and Outbound	1.65E-03	3.86E-04	4.93E-04	6.12E-03	0.00E+00	1.38E-05	3.24E-06	4.14E-06	5.14E-05	0.00E+00
Eastbound onramp to Southbay Freeway	13.12	4.00	varies - AERMAP	FYE1	Adjacent	1.3	3.4	varies - based on	1.21	3.16	50	496.7	2.00000E-02	Outbound	2.67E-03	6.25E-04	7.98E-04	9.92E-03	0.00E+00	6.72E-06	1.57E-06	2.01E-06	2.50E-05	0.00E+00
Southbay Freeway offramp heading west toward Zanker Road	13.12	4.00	varies - AERMAP	INW1	Adjacent	1.3	3.4	varies - based on	1.21	3.16	60	604.1	1.66667E-02	Inbound	3.25E-03	7.60E-04	9.71E-04	1.21E-02	0.00E+00	6.82E-06	1.60E-06	2.04E-06	2.53E-05	0.00E+00
Northbound on Zanker Road	11.48	3.50	varies - AERMAP	ZAN1	Adjacent	1.3	3.4	varies - based on	1.21	3.16	20	186.4	5.00000E-02	Inbound	1.00E-03	2.34E-04	2.99E-04	3.72E-03	0.00E+00	6.31E-06	1.48E-06	1.89E-06	2.34E-05	0.00E+00
Southbay Freeway offramp heading east toward Zanker Road	11.48	3.50	varies - AERMAP	FYE2	Adjacent	1.3	3.4	varies - based on	1.21	3.16	52	490	1.92308E-02	Inbound	2.63E-03	6.16E-04	7.87E-04	9.78E-03	0.00E+00	6.38E-06	1.49E-06	1.91E-06	2.37E-05	0.00E+00

	2026-2028		
Route Length	meters	miles	
Inbound	1724.2	1.071368	Longest inbound
Outbound	1544.5	0.959708	Longest outbound
RT Distance Route (modeling domain)	3268.7	2.031076	Longest Route

Route % 100% r1

Hourly Onsite Emissions

Ref Name	SRC ID	VOL	2027 Exhaust PM2.5 (g/s/vol)	2027 NOx (g/s/vol)	2027 CO (g/s/vol)	2027 SO2 (g/s/vol)	2027 Exhaust PM10 (g/s/vol)
Onsite Construction	Onsite	142	8.97E-06	3.43E-04	2.03E-03	3.31E-06	9.20E-06

SRC ID	AERMOD Area (m^2)	2027 Fugitive PM2.5 ($g/s/m^2$)	2027 Fugitive PM10 ($g/s/m^2$)
AREA_UTL	56929.0	6.80120E-08	1.71491E-07

	CalEEMod Trip Lengths (mi)		
	Worker	Vendor	Hauling
One-way	11.70	8.4	20.00
RT	23.4	16.8	40

Calpine Tanager	Scaling Factor		
RT w/in model domain	8.7%	12.1%	5.1%

HARP INPUT FILE

Source ID	Source No.	CAS No.	TAC	lb/yr	lb/hr
CONST	1	9901	DieselExhPM	2.51E+01	0.00E+00
CHEW	2	9901	DieselExhPM	7.39E-02	0.00E+00
ZAS1	3	9901	DieselExhPM	1.34E-02	0.00E+00
ZAS2	4	9901	DieselExhPM	1.21E-02	0.00E+00
FYW1	5	9901	DieselExhPM	4.94E-02	0.00E+00
ZAS3	6	9901	DieselExhPM	3.61E-02	0.00E+00
FYE1	7	9901	DieselExhPM	5.85E-02	0.00E+00
INW1	8	9901	DieselExhPM	7.11E-02	0.00E+00
ZAN1	9	9901	DieselExhPM	2.19E-02	0.00E+00
FYE2	10	9901	DieselExhPM	5.77E-02	0.00E+00
CHEW_C	11	75070	Acetaldehyde	7.51E-03	2.89E-06
CHEW_C	11	107028	Acrolein	3.49E-03	1.34E-06
CHEW_C	11	71432	Benzene	6.62E-02	2.55E-05
CHEW_C	11	106990	1,3-Butadiene	1.47E-02	5.67E-06
CHEW_C	11	100414	Ethylbenzene	2.81E-02	1.08E-05
CHEW_C	11	50000	Formaldehyde	4.24E-02	1.63E-05
CHEW_C	11	110543	Hexane	4.29E-02	1.65E-05
CHEW_C	11	67561	Methanol	3.22E-03	1.24E-06
CHEW_C	11	78933	Methyl Ethyl Ketone	5.36E-04	2.06E-07
CHEW_C	11	91203	Naphthalene	1.34E-03	5.16E-07
CHEW_C	11	115071	Propylene	8.20E-02	3.16E-05
CHEW_C	11	100425	Styrene	3.22E-03	1.24E-06
CHEW_C	11	108883	Toluene	1.54E-01	5.94E-05
CHEW_C	11	1330207	Xylenes	1.29E-01	4.95E-05
ZAS1_C	12	75070	Acetaldehyde	1.36E-03	5.25E-07
ZAS1_C	12	107028	Acrolein	6.33E-04	2.44E-07
ZAS1_C	12	71432	Benzene	1.20E-02	4.63E-06
ZAS1_C	12	106990	1,3-Butadiene	2.68E-03	1.03E-06
ZAS1_C	12	100414	Ethylbenzene	5.12E-03	1.97E-06
ZAS1_C	12	50000	Formaldehyde	7.70E-03	2.96E-06
ZAS1_C	12	110543	Hexane	7.80E-03	3.00E-06
ZAS1_C	12	67561	Methanol	5.85E-04	2.25E-07
ZAS1_C	12	78933	Methyl Ethyl Ketone	9.75E-05	3.75E-08
ZAS1_C	12	91203	Naphthalene	2.44E-04	9.37E-08
ZAS1_C	12	115071	Propylene	1.49E-02	5.73E-06
ZAS1_C	12	100425	Styrene	5.85E-04	2.25E-07
ZAS1_C	12	108883	Toluene	2.81E-02	1.08E-05
ZAS1_C	12	1330207	Xylenes	2.34E-02	9.00E-06
ZAS2_C	13	75070	Acetaldehyde	1.23E-03	4.74E-07
ZAS2_C	13	107028	Acrolein	5.72E-04	2.20E-07
ZAS2_C	13	71432	Benzene	1.09E-02	4.18E-06
ZAS2_C	13	106990	1,3-Butadiene	2.42E-03	9.31E-07
ZAS2_C	13	100414	Ethylbenzene	4.62E-03	1.78E-06
ZAS2_C	13	50000	Formaldehyde	6.96E-03	2.68E-06
ZAS2_C	13	110543	Hexane	7.04E-03	2.71E-06

ZAS2_C	13	67561	Methanol	5.28E-04	2.03E-07
ZAS2_C	13	78933	Methyl Ethyl Ketone	8.80E-05	3.39E-08
ZAS2_C	13	91203	Naphthalene	2.20E-04	8.47E-08
ZAS2_C	13	115071	Propylene	1.35E-02	5.18E-06
ZAS2_C	13	100425	Styrene	5.28E-04	2.03E-07
ZAS2_C	13	108883	Toluene	2.54E-02	9.75E-06
ZAS2_C	13	1330207	Xylenes	2.11E-02	8.13E-06
FYW1_C	14	75070	Acetaldehyde	5.02E-03	1.93E-06
FYW1_C	14	107028	Acrolein	2.33E-03	8.97E-07
FYW1_C	14	71432	Benzene	4.43E-02	1.70E-05
FYW1_C	14	106990	1,3-Butadiene	9.86E-03	3.79E-06
FYW1_C	14	100414	Ethylbenzene	1.88E-02	7.24E-06
FYW1_C	14	50000	Formaldehyde	2.83E-02	1.09E-05
FYW1_C	14	110543	Hexane	2.87E-02	1.10E-05
FYW1_C	14	67561	Methanol	2.15E-03	8.28E-07
FYW1_C	14	78933	Methyl Ethyl Ketone	3.59E-04	1.38E-07
FYW1_C	14	91203	Naphthalene	8.97E-04	3.45E-07
FYW1_C	14	115071	Propylene	5.49E-02	2.11E-05
FYW1_C	14	100425	Styrene	2.15E-03	8.28E-07
FYW1_C	14	108883	Toluene	1.03E-01	3.97E-05
FYW1_C	14	1330207	Xylenes	8.61E-02	3.31E-05
ZAS3_C	15	75070	Acetaldehyde	3.67E-03	1.41E-06
ZAS3_C	15	107028	Acrolein	1.70E-03	6.55E-07
ZAS3_C	15	71432	Benzene	3.24E-02	1.24E-05
ZAS3_C	15	106990	1,3-Butadiene	7.21E-03	2.77E-06
ZAS3_C	15	100414	Ethylbenzene	1.38E-02	5.29E-06
ZAS3_C	15	50000	Formaldehyde	2.07E-02	7.96E-06
ZAS3_C	15	110543	Hexane	2.10E-02	8.06E-06
ZAS3_C	15	67561	Methanol	1.57E-03	6.05E-07
ZAS3_C	15	78933	Methyl Ethyl Ketone	2.62E-04	1.01E-07
ZAS3_C	15	91203	Naphthalene	6.55E-04	2.52E-07
ZAS3_C	15	115071	Propylene	4.01E-02	1.54E-05
ZAS3_C	15	100425	Styrene	1.57E-03	6.05E-07
ZAS3_C	15	108883	Toluene	7.55E-02	2.90E-05
ZAS3_C	15	1330207	Xylenes	6.29E-02	2.42E-05
FYE1_C	16	75070	Acetaldehyde	5.94E-03	2.29E-06
FYE1_C	16	107028	Acrolein	2.76E-03	1.06E-06
FYE1_C	16	71432	Benzene	5.24E-02	2.02E-05
FYE1_C	16	106990	1,3-Butadiene	1.17E-02	4.49E-06
FYE1_C	16	100414	Ethylbenzene	2.23E-02	8.57E-06
FYE1_C	16	50000	Formaldehyde	3.35E-02	1.29E-05
FYE1_C	16	110543	Hexane	3.40E-02	1.31E-05
FYE1_C	16	67561	Methanol	2.55E-03	9.80E-07
FYE1_C	16	78933	Methyl Ethyl Ketone	4.25E-04	1.63E-07
FYE1_C	16	91203	Naphthalene	1.06E-03	4.08E-07
FYE1_C	16	115071	Propylene	6.50E-02	2.50E-05
FYE1_C	16	100425	Styrene	2.55E-03	9.80E-07

FYE1_C	16	108883	Toluene	1.22E-01	4.70E-05
FYE1_C	16	1330207	Xylenes	1.02E-01	3.92E-05
INW1_C	17	75070	Acetaldehyde	7.23E-03	2.78E-06
INW1_C	17	107028	Acrolein	3.36E-03	1.29E-06
INW1_C	17	71432	Benzene	6.38E-02	2.45E-05
INW1_C	17	106990	1,3-Butadiene	1.42E-02	5.46E-06
INW1_C	17	100414	Ethylbenzene	2.71E-02	1.04E-05
INW1_C	17	50000	Formaldehyde	4.08E-02	1.57E-05
INW1_C	17	110543	Hexane	4.13E-02	1.59E-05
INW1_C	17	67561	Methanol	3.10E-03	1.19E-06
INW1_C	17	78933	Methyl Ethyl Ketone	5.16E-04	1.99E-07
INW1_C	17	91203	Naphthalene	1.29E-03	4.97E-07
INW1_C	17	115071	Propylene	7.90E-02	3.04E-05
INW1_C	17	100425	Styrene	3.10E-03	1.19E-06
INW1_C	17	108883	Toluene	1.49E-01	5.72E-05
INW1_C	17	1330207	Xylenes	1.24E-01	4.77E-05
ZAN1_C	18	75070	Acetaldehyde	2.23E-03	8.58E-07
ZAN1_C	18	107028	Acrolein	1.04E-03	3.98E-07
ZAN1_C	18	71432	Benzene	1.97E-02	7.57E-06
ZAN1_C	18	106990	1,3-Butadiene	4.38E-03	1.69E-06
ZAN1_C	18	100414	Ethylbenzene	8.37E-03	3.22E-06
ZAN1_C	18	50000	Formaldehyde	1.26E-02	4.84E-06
ZAN1_C	18	110543	Hexane	1.27E-02	4.90E-06
ZAN1_C	18	67561	Methanol	9.56E-04	3.68E-07
ZAN1_C	18	78933	Methyl Ethyl Ketone	1.59E-04	6.13E-08
ZAN1_C	18	91203	Naphthalene	3.98E-04	1.53E-07
ZAN1_C	18	115071	Propylene	2.44E-02	9.38E-06
ZAN1_C	18	100425	Styrene	9.56E-04	3.68E-07
ZAN1_C	18	108883	Toluene	4.59E-02	1.77E-05
ZAN1_C	18	1330207	Xylenes	3.82E-02	1.47E-05
FYE2_C	19	75070	Acetaldehyde	5.86E-03	2.26E-06
FYE2_C	19	107028	Acrolein	2.72E-03	1.05E-06
FYE2_C	19	71432	Benzene	5.17E-02	1.99E-05
FYE2_C	19	106990	1,3-Butadiene	1.15E-02	4.43E-06
FYE2_C	19	100414	Ethylbenzene	2.20E-02	8.46E-06
FYE2_C	19	50000	Formaldehyde	3.31E-02	1.27E-05
FYE2_C	19	110543	Hexane	3.35E-02	1.29E-05
FYE2_C	19	67561	Methanol	2.51E-03	9.67E-07
FYE2_C	19	78933	Methyl Ethyl Ketone	4.19E-04	1.61E-07
FYE2_C	19	91203	Naphthalene	1.05E-03	4.03E-07
FYE2_C	19	115071	Propylene	6.41E-02	2.46E-05
FYE2_C	19	100425	Styrene	2.51E-03	9.67E-07
FYE2_C	19	108883	Toluene	1.21E-01	4.64E-05
FYE2_C	19	1330207	Xylenes	1.01E-01	3.87E-05

LOS ESTEROS CRITICAL ENERGY FACILITY (03-AFC-02C)

Petition for Modification- Tanager BESS Project

DATA RESPONSE SET 1B

ATTACHMENT DR-A11

AECOM
300 Lakeside Drive
Suite 400
Oakland, CA 94612
aecom.com

To:
Nadira Basdeo, PMP
EHS Program Manager
3003 Oak Road, Suite 400
Walnut Creek, CA 94597

CC:
Steve Leach

Project name:
Tanager BESS Project

From:
Matthew Bettelheim

Date:
November 12, 2025

Memo

Subject: Burrowing Owl Habitat Assessment and Protocol-Level Surveys for the Tanager BESS Project, Santa Clara County, California

Tanager Power, LLC, proposes to construct and operate the Tanager Battery Energy Storage System (BESS) Project (Project) at the former laydown and construction parking area for the Los Esteros Critical Energy Facility (LECEF). The western burrowing owl (*Athene cunicularia hypugaea*) is a California Species of Special Concern and, as a candidate for potential listing as a protected species under the California Endangered Species Act, is presently afforded protection as a state threatened/endangered species until the listing candidacy is resolved.

This technical memorandum provides the results of a western burrowing owl habitat assessment and protocol-level surveys performed in 2025 to determine whether this protected species or suitable habitat to support this species are present at the project site or vicinity.

Project Location

The LECEF is located on Assessor Parcel No. 015-31-072. The Tanager BESS Project will be co-located on the same parcel, north of Aviso Milpitas Rd. and south of the LECEF just outside of the existing fence line. The project site and study area includes 12.8-acres south of LECEF that was previously used for construction staging, parking, and laydown during construction of the LECEF, and the gen-tie corridor, which totals 3.4 acres, located along the strip of land immediately east of the LECEF (Figure 1). The project site is currently undeveloped.

Project Description

The BESS project consists of the installation of a lithium-ion-battery system that will be used to store and provide power to the grid via a new generation interconnection (gen-tie) line. Existing paved roadways would provide access to the 12.8-acre BESS footprint from Zanker Road. The project site is currently vegetated by non-native annual grasses and ornamental woody plants around the LECEF perimeter.

Due to the known presence of western burrowing owl in the City of San José's designated burrowing owl habitat preserve., and the availability of potentially suitable nesting/overwintering habitat onsite, a western burrowing owl habitat assessment and protocol-level surveys were performed in 2025 and are described below.

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FIGURE 1

Tanager BESS Project Location

Habitat Assessment

Environmental Setting

The proposed BESS Project is located immediately south of the existing LECEF, and north of State Route 237. Coyote Creek and the associated riparian corridor are approximately 1,050 feet east of the project site. The project site is approximately 2,200 feet southeast of the San Jose/Santa Clara Water Pollution Control Plant (WPCP), and approximately 0.9 mile east of the WPCP buffer lands. The WPCP sludge drying ponds are located approximately 0.4 mile north of the LECEF.

The existing vegetation of the project site was previously mapped as California Annual and Perennial Grasslands Macrogroup dominated by European annual grasses such as *Avena*, *Bromus*, *Hordeum*, and *Festuca* (Jacobs 2025). Characteristic weedy species observed during the habitat assessment in this predominantly non-native annual grassland include common wild oat (*Avena fatua*) and mustard (*Brassica* sp.) (Figure 2). Native coyote brush (*Baccharis pilularis*) is present throughout the project site, but the limited occurrences are primarily low-growing due to annual mowing required for fire control. Bare ground was limited to areas along the road shoulder, a north-south gravel service road connected to Thomas Foon Chew Way, and deposits of soil surrounding active California ground squirrel (*Otospermophilus beecheyi*) burrows.

At the time of the initial habitat assessment (April 10, 2025), the non-native annual grasslands were typically 12 to 18 inches high throughout a majority of the project site, with the exception of the westernmost edge of the project site paralleling Thomas Foon Chew Way and the gravel service road. The elevation of the western margin of the project site appears to be slightly lower than the other portions of the project site. The elevation difference may be due to the placement of fill material when the project site was used as a temporary construction staging, parking, and laydown area during the construction of the LECEF.

The project site was cultivated prior to the development of the LECEF. Aerial photos from March 2000 indicate the presence of intensive row crop and greenhouse cultivation at the project site. Construction activities are visible in subsequent aerial photos from 2003. The project site is currently mowed for weed abatement and fire risk reduction in accordance with local ordinances and fire codes. The project site had not been mowed in April but had been recently mowed prior to the third protocol-level survey on May 21, 2025.

Habitat Assessment

Methods

The first of two western burrowing owl habitat assessments was performed by AECOM biologists Matthew Bettelheim and Andrea Cortes on April 10, 2025, from 8:00 AM to 1:00 PM in accordance with the California Department of Fish and Game *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) to record and characterize vegetation and burrows. The initial habitat assessment was performed by walking transect surveys, spaced roughly 75 feet apart, across the entire project footprint. All suitably-sized burrows and burrow complexes were mapped using the Field Maps application, and representative photographs of burrows and burrow complexes were recorded. All burrows were inspected for burrowing owl presence and/or sign of presence. A second walking transect survey of the project site was conducted on May 21, 2025, to update the April 10, 2025, habitat assessment because the project site had been subsequently mowed.

Results

During the initial habitat assessment, AECOM Biologists mapped approximately 215 ground squirrel burrows and burrow complexes within the 12.8-acre project site. In addition to the abundance of burrows, ground squirrel activity was high in the parcels adjacent to the survey area and surrounding the LECEF perimeter. Grassland habitats observed within the survey area, the surrounding parcels, and around the LECEF perimeter were primarily dominated by non-native grasses and some native and non-native ornamental tree and shrub plantings. At the time of the initial habitat assessment, the annual grasslands were approximately 12 to 18 inches high throughout much of the survey area (Figures 4 – 8).

The parcels to the west and east of the project footprint are dominated by the same California Annual and Perennial Grasslands Macrogroup characterized by tall grasses, approximately 24-36 inches high.

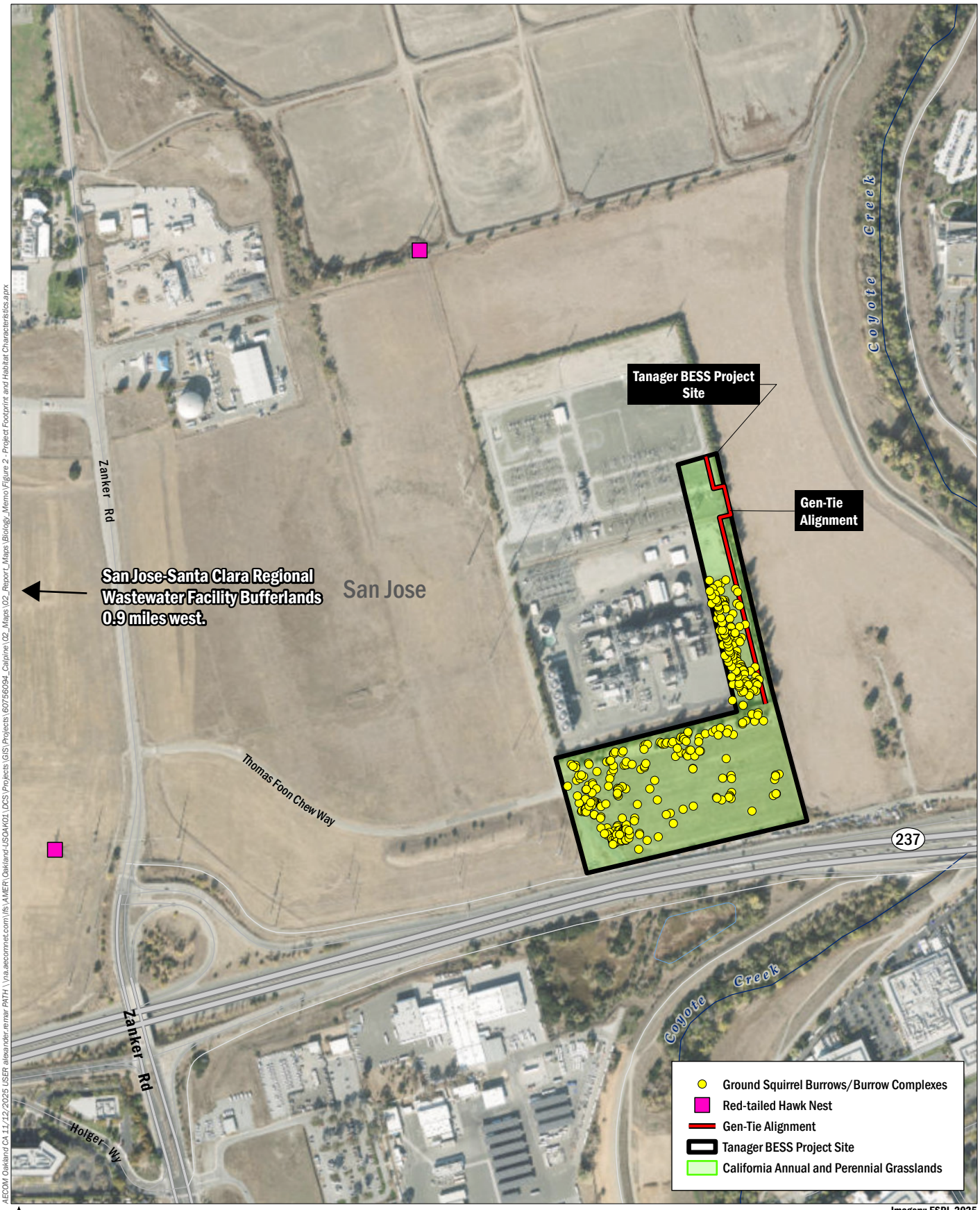

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FIGURE 2

Project Footprint and Habitat Characteristics

Although these adjacent parcels are outside the project footprint and were not formally assessed by AECOM biologists, portions of these perimeter parcels within approximately 300 feet of the project site were regularly scanned with binoculars as part of the protocol-level surveys. A small mound, approximately 700 feet in length, is located immediately west of the survey area on the south side of Thomas Foon Chew Way. The mound supports several small trees, but the remainder of the mound is regularly mowed and inhabited by ground squirrels with burrows and burrow complexes present. The undeveloped land to the east is separated from the survey area and the LECEF by a chain link fence.

Ground squirrel activity was observed throughout the survey area during the initial habitat assessment and in the parcels extending from Zanker Rd, in the grasslands along Thomas Foon Chew Way, and surrounding the LECEF. During the initial habitat assessment, 215 suitable burrows and/or burrow complexes of approximately >11 cm in diameter (height and width) and >150 cm in depth were mapped within the 12.8-acre survey area.

Habitat characteristics during the second habitat assessment were similar to the April conditions with the exception that the non-native grasslands had been mowed, resulting in short-stature grasslands throughout the project site, and ground squirrel activity was markedly less prevalent. Considerably fewer open, active burrows were observed in May compared to the number of burrows recorded in April. This observation may be attributable to seasonal changes in the surface activity of California ground squirrels. Although newborn and juvenile squirrels can be active year-round, adults often disappear from the surface after the breeding season for 3–4 months each year to estivate (avoid the summer heat) from as early as May into November (males) or from late July into January (females) (Smith et al. 2016).

Burrowing Owl Occupancy

Methods

In addition to conducting a habitat assessment for burrowing owls, AECOM biologists reviewed the CDFW's California Natural Diversity Database (CNDDB) to determine whether known occurrences of burrowing owl breeding, foraging, or over-wintering activity has been reported within the project site or within a 5-mile radius.

Approximately 1 mile west of the project site and Zanker Road, the San José-Santa Clara Regional Wastewater Facility maintains undeveloped open space that consists of two primary areas: the "bufferlands" (687 ac) and an owl management area (50 acres). Approximately 180 acres of these two areas combined have been designated as a burrowing owl habitat preserve by the city of San José. The city partners with the Santa Clara Valley Habitat Agency to manage and improve the habitat, monitor, and track the owls at the preserve (City of San José 2013). The resident owl population is managed under the guidance of the Santa Clara Valley Audubon Society (Talon Ecological Research Group 2025).

AECOM biologists surveyed portions of the bufferlands burrowing owl habitat preserve that were visible from the public right-of-way (e.g., Disk Drive, Nortech Parkway, Baytech Drive) to compare habitat and owl activity with the project site. The off-site survey results confirmed that burrowing owls were active and detectible by surveyors at roughly the same time that habitat assessment and breeding season surveys were conducted within the study area.

Results

During the April habitat assessment, no burrowing owls, individuals or pairs, were observed. Additionally, there was no sign of burrowing owl presence at any of the burrows that were mapped during the initial habitat assessment.

No CNDDB occurrences of burrowing owls have been reported within the 12.8-acre project site. In 2009, observations of burrowing owls were reported in the parcel bounded by SR 237, Zanker Road, and Thomas Foon Chew Way (CNDDB #647) roughly 1,220 feet to the west of the project site (Figure 3). Burrowing owl have also been reported roughly 1,860 feet to the southwest in the parcel southeast of the intersection of Zanker Road and SR 237 (Occurrence #1228) south of SR 237 in 2011; in the burrowing owl preserve roughly 1,925 feet to the northwest near the San José-Santa Clara Regional Wastewater Facility (Occurrence #392) in 2016; and roughly 2,260 feet to the northwest (Occurrence #749) in 2005.

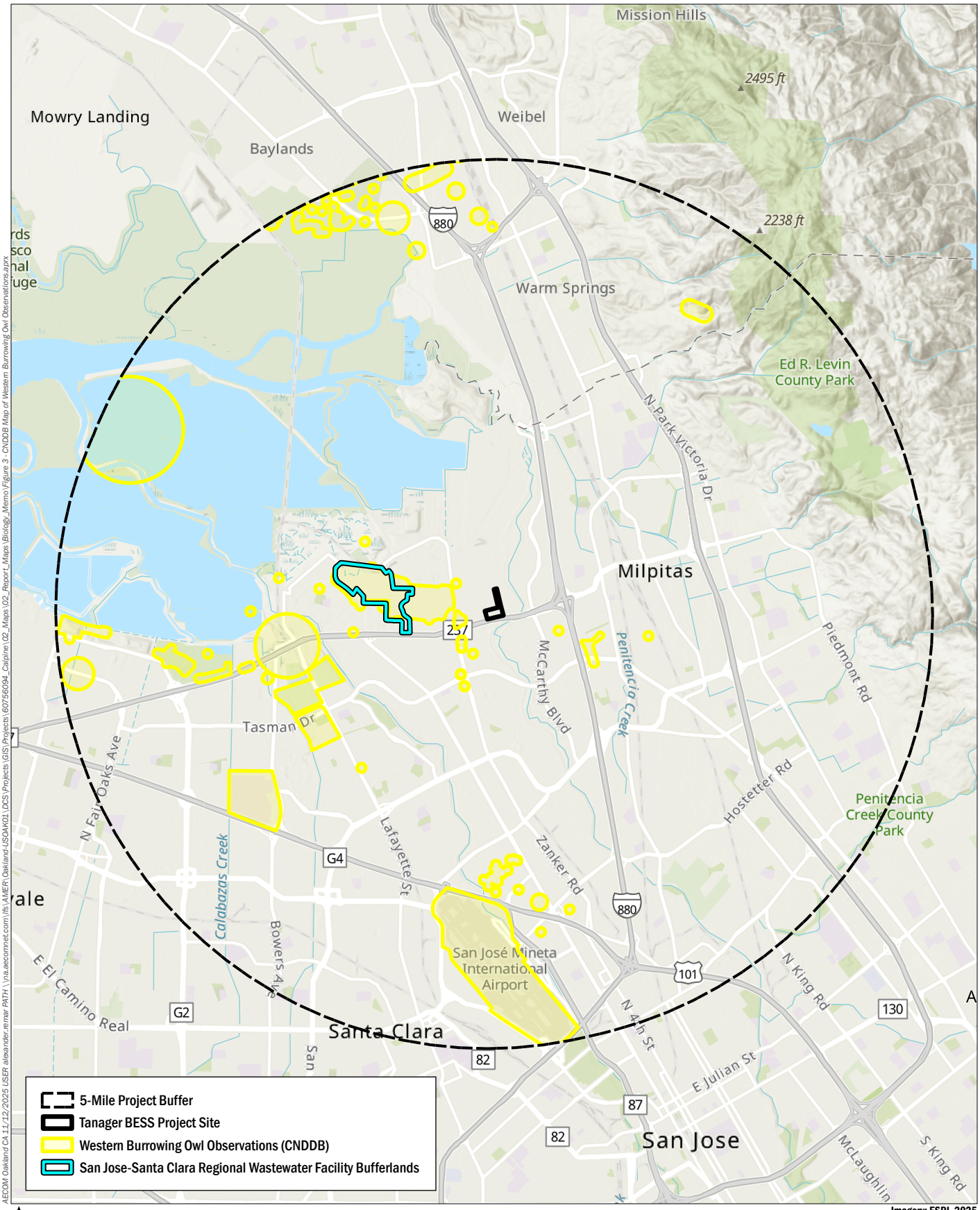

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FIGURE 3

CNDDB Map of Western Burrowing Owl Observations

One burrowing owl was observed in the Wastewater Facility bufferlands roughly 3,560 feet west of the project site in August 2024, while telemetry data documented one of three tracked owls foraging within 2,880 feet of the project site in August and September 2024 (Talon Ecological Research Group 2025). At the locations where these owls were observed, vegetation was reportedly "too tall and unsuitable for burrowing owls during the earlier part of the breeding season until mowing occurred in later July/August" (Talon Ecological Research Group 2025).

During off-site surveys of the burrowing owl habitat preserve, burrowing owl activity in the region was recorded from two separate vantage points of two separate sections of the preserve. From the first vantage point located off-site roughly 1.65 miles west of the project site, a pair of owls were observed in the preserve on April 30, 2025, near the entrance of several presumed active nest mound burrows. Burrowing owls were observed from this first vantage point during a return trip to the burrowing owl habitat preserve on May 21, 2025 (Figure 12). Three downy owlets were observed near the entrance to the same presumed active nest mound burrows, and two adults were observed in the area surrounding the nest mound within 5 to 10 feet from the young. During a follow-up visit on June 11, 2025, to this location, seven individual owls that included three adults and four juveniles were observed near the same presumed active nest mound burrow.

On April 30, 2025, another owl visible from the public right-of-way was observed from a second vantage point inside one of the preserve's hacking enclosures (= temporary aviaries) located approximately 0.97 mile west of the project site. The hacking enclosures have been constructed to assist with the "soft-release" (= introduction) of breeding owl pairs in the preserve (Talon Ecological Research Group 2025).

Although a formal habitat assessment and protocol-level breeding season surveys were not conducted within the burrowing owl habitat preserve, the habitat conditions within the preserve appeared to be more favorable for burrowing owl occupancy due to the prevalence of sparsely vegetated artificial burrow mounds and sparse, short-stature grasses (12 to 18 inches tall) throughout the preserve (see Figure 12).The preserve boundaries are approximately 1 mile west of the project site.

Protocol Surveys

Western burrowing owl protocol-level surveys were performed in accordance with the California Department of Fish and Wildlife's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012), which calls for a combination of breeding season and/or non-breeding season surveys.

Methods

In accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012), breeding season surveys were conducted consisting of four (4) survey visits between February 1 and August 31, as follows (Table 1):

1. One site visit between 15 February and 15 April, and
2. Three survey visits, at least three weeks apart, between 15 April and 15 July.

Table 1. Survey Dates and Weather Conditions

Habitat Assessment	Survey #1	Survey #2	Survey #3	Survey #4
April 10, 2025 (8AM – 1PM)	**April 10, 2025** (5PM – 8PM)	**April 30, 2025** (5PM – 8PM)	**May 21, 2025** (6AM – 8AM)	**June 11** (6AM – 8AM)
Temp: 56-65 degrees F	**Temp:** 67-58 degrees F	**Temp:** 70-63 degrees F	**Temp:** 53-57 degrees F	**Temp:** 54-57 degrees F
Winds: 9 mph NNW to 0 mph N	**Winds:** 15 mph NNW to 9 mph N	**Winds:** 14 mph NW to 12 mph NW	**Winds:** 0mph N to 0 mph N	Winds: 5 mph N to 5 mph NW
Precipitation: none	**Precipitation:** none	**Precipitation:** none	**Precipitation:** none	**Precipitation:** none
Ambient: partly cloudy, 100% visibility	**Ambient:** partly cloudy, 100% visibility	**Ambient:** clear skies, 100% visibility	**Ambient:** clear skies, 100% visibility	**Ambient:** overcast, 100% visibility

AECOM biologists Matthew Bettelheim and Andrea Cortes performed four breeding season surveys timed in accordance with the Staff Report on Burrowing Owl Mitigation (Table 1). Survey dates, times, and prevailing weather conditions are summarized in Table 1. Biologist qualifications are summarized in Table 2. Field forms are included in Appendix A.

Table 2. Surveyor qualifications

Matthew Bettelheim, CWB ®	Andrea Cortes
• 26 years of experience • 1 year nest searching (nest, eggs, hatchlings), banding, handling/collecting Dark-Eyed Juncos • 26 years (annual) nest searching (nest, eggs, hatchlings), pre-construction, and construction monitoring surveys for passerines, raptors, shorebirds, etc. • 26 years (intermittent) performing protocol-level habitat assessment and breeding/wintering surveys for Western Burrowing Owl (positive detections) • *Home Study Course in Bird Biology* course (Cornell Lab of Ornithology; 2010) • *North American Owls* course (Golden Gate Audubon Society/Dave Quady; 2009) • *Urban Wildlife Management* course (Texas A&M University; 2010) • *WildC.A.T. – Wildlife Construction Awareness Training* (training; presenter/organizer), The Wildlife Society – Western Section (2016 – present) • Previously approved as Qualified/Authorized Biologist for Western Burrowing Owl and nesting birds	• 6 years of experience with over 700+ hours conducting nesting bird and raptor surveys and pre-construction surveys • Surveys involve locating nests, nest identification, identifying nest status, nest abatement, and establishing exclusion buffers. • 2 years (intermittent) performing protocol-level habitat assessment and breeding/wintering surveys for Western Burrowing Owl (positive detections) • *Rare Shoreline Species Workshop* course (San Francisco Bay Bird Observatory; 2023) for Snowy Plover, Least Terns, Ridgeway's Rail. • 125+ hours of bird banding experience in Central America • Previously approved as Qualified/Authorized Biologist for nesting birds

During the protocol-level breeding season surveys, biologists positioned themselves at two different locations, at opposite ends of the project site, which provided a clear, elevated, unobstructed view of the project site. During each survey event, biologists surveyed the project site and the surrounding area for either three hours before sunset (April 10, April 30), or two hours after sunrise (May 21, June 11) monitoring all bird activity with binoculars. AECOM biologists also regularly scanned adjacent portions of the parcel that borders the service road on the western edge of the project site.

Results

No western burrowing owl individuals, sign, or nesting activity were observed within the project site or adjacent areas during the 2025 breeding season surveys.

Bird species observed within the project footprint during the initial habitat assessment and protocol level surveys are listed in Table 3.

Known or potential predatory species observed in the study area include common raven (Clark 2017); American crow; two red-tailed hawk nest pairs and their young (Figure 9 – 10); Pacific gophersnake (*Pituophis catenifer catenifer*) (Figure 11), and a family of striped skunks (*Mephitis mephitis*) (Coulombe 1971).

Table 3. Bird species observed during the 2025 habitat assessment and protocol level surveys

Scientific Name	Common Name
Agelaius phoeniceus	red-winged blackbird
Anas platyrhynchos	mallard
Aphelocoma californica	California scrub-jay
Ardea herodias	great blue heron
Baeolophus inornatus	oak titmouse
Bombycilla cedrorum	cedar waxwing
Branta canadensis	Canada goose
Buteo jamaicensis	red-tailed hawk *
Calypte anna	Anna's hummingbird
Cathartes aura	turkey vulture
Charadrius vociferus	killdeer
Columba livia	rock pigeon
Corvus brachyrhynchos	American crow *
Corvus corax	common raven *
Fulica americana	American Coot
Haemorhous mexicanus	house finch
Hirundo rustica	barn swallow
Meleagris gallopavo	wild turkey
Melospiza melodia	song sparrow
Mimus polyglottos	northern mockingbird
Psaltriparus minimus	bushtit
Sayornis nigricans	black phoebe
Sturnus vulgaris	European starling
Zenaida macroura	mourning dove
* Indicates potential predator species	

Red-tailed hawks were observed at the project site and vicinity. Two active nests were observed between April and June (see Figure 9 – 10). One nest was observed in a tree snag 0.45 mile west of Thomas Foon Chew Way,

and the second nest was located on a power pylon 0.38 mile north of the LECEF facility. Adult red-tailed hawks were present at both nests during the two April surveys. The adult red-tailed hawks associated with the nest west of Thomas Foon Chew Way were not seen again during the May and June surveys, but the adults associated with the pylon nest site north of the LECEF facility were seen regularly between April and June. The adults and one fledgling from the pylon nest were observed atop the pylon with the young close to flight in May, and all three birds were observed foraging in the fields west of the LECEF facility in June. In addition to these birds, additional red-tailed hawks were seen perched and in flight in the ornamental trees between the LECEF facility and the project site, and along several power poles just north of State Route 237.

Discussion

No burrowing owls or associated signs of burrowing owls were observed within the project site or adjacent areas west of the service road that were visible during the surveys. Habitat conditions ranged from unsuitable (prior to vegetation management activities) due to the high-stature grasslands, to suitable for nesting and overwintering of owls after the field was mowed. High-stature grasslands typically provide sub-optimal habitat that precludes burrowing owl occupancy because the tall grasses impair their ability to detect approaching predators. Low-stature grasslands are more suitable for nesting and occupancy by burrowing owls because they provide an open viewshed for burrowing owls that allows them to more easily detect approaching threats. Although grassland height is not an absolute determinant in burrowing owl occupancy, it can be an important factor in overall habitat suitability.

Likewise, while the presence of predators is not an absolute determinant in burrowing owl occupancy, it can be a factor in overall habitat suitability. The presence of several established red-tailed hawk pairs and the family of skunks could play a factor in overall habitat suitability at this location.

The observations of western burrowing owls at the nearby burrowing owl habitat preserve confirmed that the survey timing was appropriate to detect the species if they were present within the project site. Habitat conditions within the preserve appeared to be more favorable for burrowing owl occupancy due to the prevalence of short-stature grasses and artificial mounds. Based on data collected at the burrowing owl preserve between 2016 and 2024, researchers “surmise[d] that the presence of burrowing owls was due to rigorous vegetation management, maintaining the vegetation around burrows short” and that tall-stature grasslands were “too tall and unsuitable for burrowing owls during the earlier part of the breeding season until mowing occurred in later July/August” (Talon Ecological Research Group 2025). These observations support the idea that grass-height may be a determining factor in burrowing owl occupancy in this area.

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Figure 4. Representative photo of Project site conditions during initial habitat assessment (April 10, 2025).

Figure 5. Representative photo of Project site conditions during initial habitat assessment (April 10, 2025).

Figure 6. Representative photo of site conditions after the Project site was mowed (May 21, 2025).

Figure 7. Representative photo of site conditions after the Project site was mowed (May 21, 2025).

Figure 8. Representative photo of ground squirrel burrows on the Project site (April 10, 2025).

Figure 9. Red-tailed hawk nest in power pylon north of LEEC (May 21, 2025).

Figure 10. Red-tailed hawk observed foraging on the Project site (April 10, 2025).

Figure 11. Pacific gopher snake observed on the Project site (May 21, 2025).

Figure 12. Burrowing owls observed off site at the San José-Santa Clara Wastewater Facility bufferlands burrowing owl habitat preserve (May 21, 2025). Note the preserve's short-stature grassland habitat compared to the tall-stature grasslands on the Project site prior to (Figures 4-5) and after (Figures 6-7) mowing.

Appendix A. Field Forms

Cal Pine Tanager BESS

April 10, 2025

A. Cortes
M. Bettelheim

①

HABITAT ASSESSMENT

8AM → 1PM

Temp: 56° AM to 65° PM
Wind: 9 mph NNW / 0 mph N
Partial clouds, 100% visibility

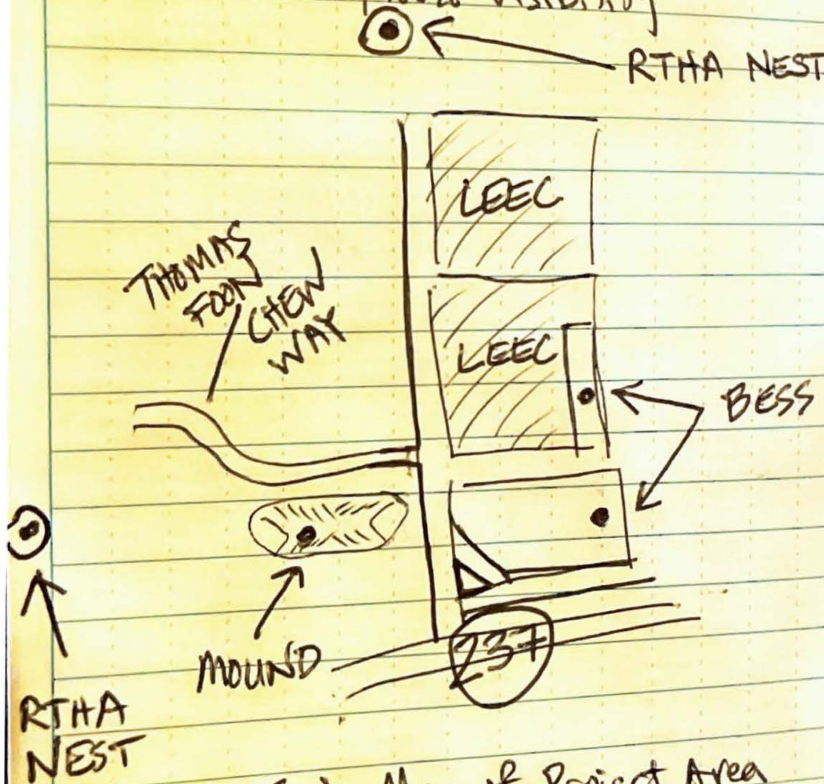
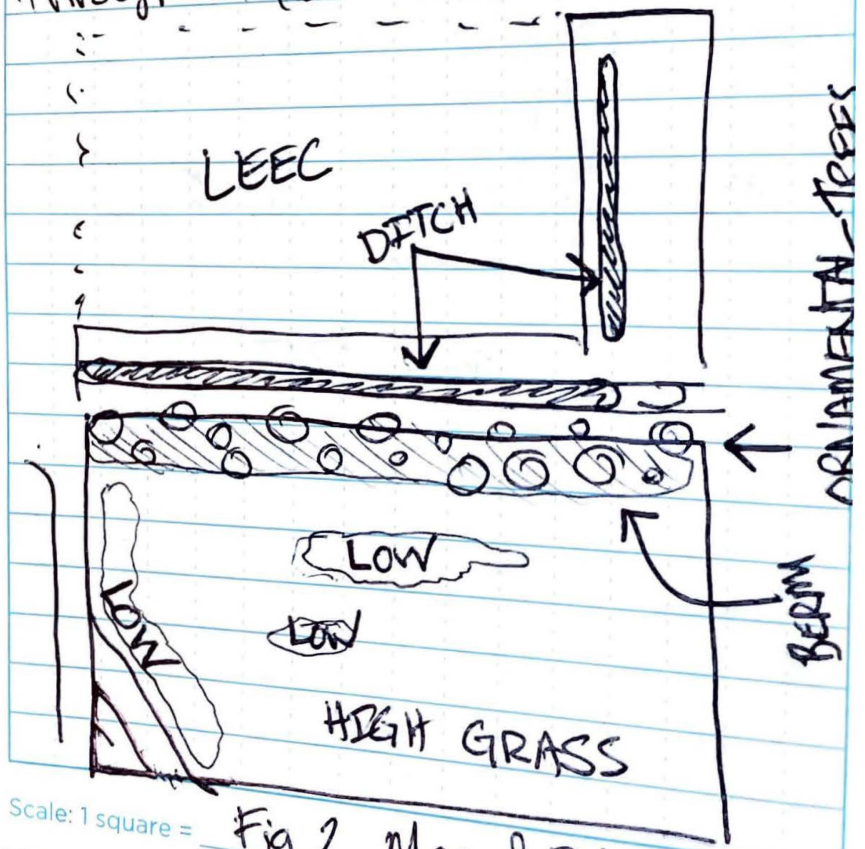


Fig 1. Map of Project Area

Scale: 1 square = _____

②

MB & AC walk transects, recorded habitat conditions and burrow (individ + complexes). No signs of BUOW or BUOW activity obs. Grasses mostly 12-18 in except discrete spots to west and little islands in middle. Small stands of coyote brush, low-lying. Squirrel mounds, spoils, burrows scattered throughout (and mapped).



Scale: 1 square = _____

Fig 2 Map of Project Site

Kitt in the Rain

③

Species obs.: red-tailed hawk, Pacific tree frog, striped skunk, red winged blackbird, Anna's hummingbird, song sparrow, bushtit, house finch, common raven, rock pigeon, American crow, mourning dove, California scrub jay

Two red tailed hawk nest obs in vicinity.

#1. in pylon north of ~~Forney~~ LEEC site

#2. in snag west of Thomas Foon Chow Way

Scale: 1 square = _____

BREEDING SEASON SURVEY #1

April 10, 2025

5PM → 8PM

A. Cortes
M. Bettelheim

Temp: 67°F PM → 58°F PM
Wind: 15mph NNW / 9mph N
Partial clouds, 100% visibility

No Burrow obs

Species obs: red-tailed hawk, song sparrow, American crow, California scrub jay, common raven, rock pigeon, Chorus frog

Scale: 1 square = _____

Rite in the Rain

CalPine Tanager BESS

April 30, 2025
Bettelheim, M.
Cortes, A

BREEDING SEASON SURVEY #2
5PM → 8PM
Temp: 70° to ~~65°~~ 63°
Wind: 14mph NW → 12mph NW
clear skies, 100% visibility

Species Obs: pacific gopher snake (huge!), great blue heron, rock pigeon, red-tailed hawk, European starling, house finch, canada goose

No Bullow

Scale: 1 square = _____

CalPine Tanager BESS

May 21, 2025
Bettelheim, M
Cortes, A.

BREEDING SEASON SURVEY #3
6AM → 8AM
Temp: 53° → 57°
Wind: 0mph - 0mph
clear skies, 100% visib.

No Bullow

Species obs: red-tailed hawk, rock pigeon, house finch, killdeer, canada goose, Anna's hummingbird, bushtit, Bombus vosnesenskii

CalPine Tanager BESS

June 11, 2025
Bettelheim, M
Cortes, A.

BREEDIN SEASON SURVEYS #4
6AM-8AM
Temp: 54-57
Wind 5mph N/SWest NW
Overcast skies, 100% visibility

Species obs house finch, rock pigeon, red-tailed hawk, bushtit, barn swallow, Common raven, Canada goose, red-winged blackbird

Scale: 1 square = _____

April 10, 2025 8:00 am - 1:00pm
56 - 65°F wind 9 mph NNW, 0 Mph N
precip: 0 partly cloudy, 100% visibility

- Red winged Blackbird
- mallard
- Scrubjay
- Great blue heron
- cedar waxwing
- Red tailed hawk
- Rock pigeon
- Turkey vulture
- House finch
- Barn swallow
- Song sparrow
- Wild turkey
- Northern mockingbird
- European Starling
- mourning dove
- American Coot
- Canada goose
- Bushtit
- Black phoebe

April 10, 2025 5:00pm - 8:00pm
67-58° F Wind: 15 mph NNW to 9mph N
Precip: 0 Partly cloudy, 100% visibility

- Red wing blackbird
- Turkey Vulture
- Song Sparrow
- Mourning dove
- Great blue heron
- American crow
- Killdeer
- Rock pigeon
- Black phoebe
- Red tailed hawk
- Northern mockingbird
- Mallard
- Canada goose
- Barn Swallow

April 30, 2025 5:00pm - 8:00pm
70-63°F Wind: 14 mph NW to 12 mph NW
Precip: 0 Clear skies, 100% visibility

- Red winged blackbird
- Mallard
- California Scrub Jay
- Great blue heron
- Canada goose
- Red tailed hawk
- oak titmouse
- Anna's hummingbird
- Turkey Vulture
- Rock pigeon
- American Crow
- Common raven
- House finch
- Barn Swallow
- Song Sparrow
- European starling

May 21, 2025 6:00am - 8:00am
53-57°F wind: 0 mph N to 0 mph N
Precip: 0 Clear skies, 100% visibility

- Great blue heron
- Red winged blackbird
- Mallard
- Oak titmouse
- European starling
- California Scrubjay
- Canada goose
- Anna's hummingbird
- Turkey Vulture
- Killdeer
- American crow
- House finch
- Barn Swallow
- Song Sparrow
- Northern mockingbird
- Bushtit
- Black phoebe
- Mourning dove

June 11, 2025 6:00am - 8:00am
54-57°F wind: 5mph N to 5mph NW
Precip: 0 overcast, 100% visibility

- Red winged blackbird
- mallard
- California Scrub jay
- Great blue heron
- Oak titmouse
- Canada goose
- Red tailed hawk
- Turkey Vulture
- Killdeer
- Rock pigeon
- American crow
- House finch
- Song Sparrow
- Northern mockingbird
- European Starling
- mourning dove