

## APPENDIX A

---

### Air Quality Technical Report

# **Air Quality Technical Report**

## **Valley Water Tularcitos Creek Milpitas Project**

**PREPARED BY:**

RCH Group

Contact: *Mike Ratte, Senior Air Quality Scientist*



**PREPARED FOR:**

Panorama Environmental, Inc.  
717 Market Street, Suite 650  
San Francisco, CA 94103



**February 10, 2026**

## **Table of Contents**

|      |                            |    |
|------|----------------------------|----|
| 1.0  | Introduction               | 1  |
| 2.0  | Project Overview           | 1  |
| 3.0  | Analysis Methodology       | 4  |
| 4.0  | Existing Conditions        | 4  |
| 5.0  | Thresholds of Significance | 15 |
| 6.0  | Emissions Inventory        | 16 |
| 7.0  | Health Impacts             | 22 |
| 8.0  | Odor Impacts               | 23 |
| 9.0  | Cumulative Impacts         | 24 |
| 10.0 | Greenhouse Gas Emissions   | 24 |
| 11.0 | Summary                    | 40 |

### Attachment A: Emissions Inventory Supporting Information

## **List of Tables**

|         |                                                 |    |
|---------|-------------------------------------------------|----|
| Table 1 | Air Quality Data Summary                        | 11 |
| Table 2 | BAAQMD Air Quality Significance Thresholds      | 16 |
| Table 3 | Construction Schedule                           | 17 |
| Table 4 | Estimated Construction Equipment Usage          | 18 |
| Table 5 | Estimated Average Daily Emissions               | 19 |
| Table 6 | Estimated Construction Greenhouse Gas Emissions | 36 |

## **List of Figures**

|          |                   |   |
|----------|-------------------|---|
| Figure 1 | Regional Overview | 2 |
| Figure 2 | Project Location  | 3 |

## 1.0 INTRODUCTION

This document presents the results of an air quality analysis prepared for the Santa Clara Valley Water District (Valley Water) Tularcitos Creek Milpitas Project (project). This document provides an overview of the existing air quality conditions at the project site, the air quality regulatory framework, and an analysis of potential air quality impacts that would result from implementation of the project. Issues related to climate change and greenhouse gas (GHG) emissions are also included.

The supporting information, methodology, and assumptions used in the construction air emissions inventory are provided in:

- **Attachment A: Construction Emissions Inventory Supporting Information**

## 2.0 PROJECT OVERVIEW

Valley Water is currently proposing the Tularcitos Creek Downstream North Hillview Drive Levee Repair. The proposed project is the repair of approximately 2,815 linear feet (by eight feet wide with a depth of three feet) of a non-accredited levee that has eroded due to damage from rodent activity along the west bank of Tularcitos Creek in the City of Milpitas. The project involves dewatering, installation and removal of a temporary access ramp, and bank stabilization along Tularcitos Creek between North Hillview Drive and Paseo Refugio in the City of Milpitas. The project area is approximately 2.7 acres. Work would only occur Monday through Friday between 7 a.m. and 7 p.m. Project generators (one primary and one backup) would operate 24 hours per day, seven days per week during the construction activities. The generators would be placed at the top of the left bank (westside), looking downstream, as far from residential areas as feasible. Project would be completed in approximately 120 working days.

The proposed project sites are located within the City of Milpitas, on Valley Water property, as shown in **Figure 1: Regional Overview**. Repair work would occur along and within the levee. The Tularcitos Creek, where project work would occur, is shown in **Figure 2: Project Location**.

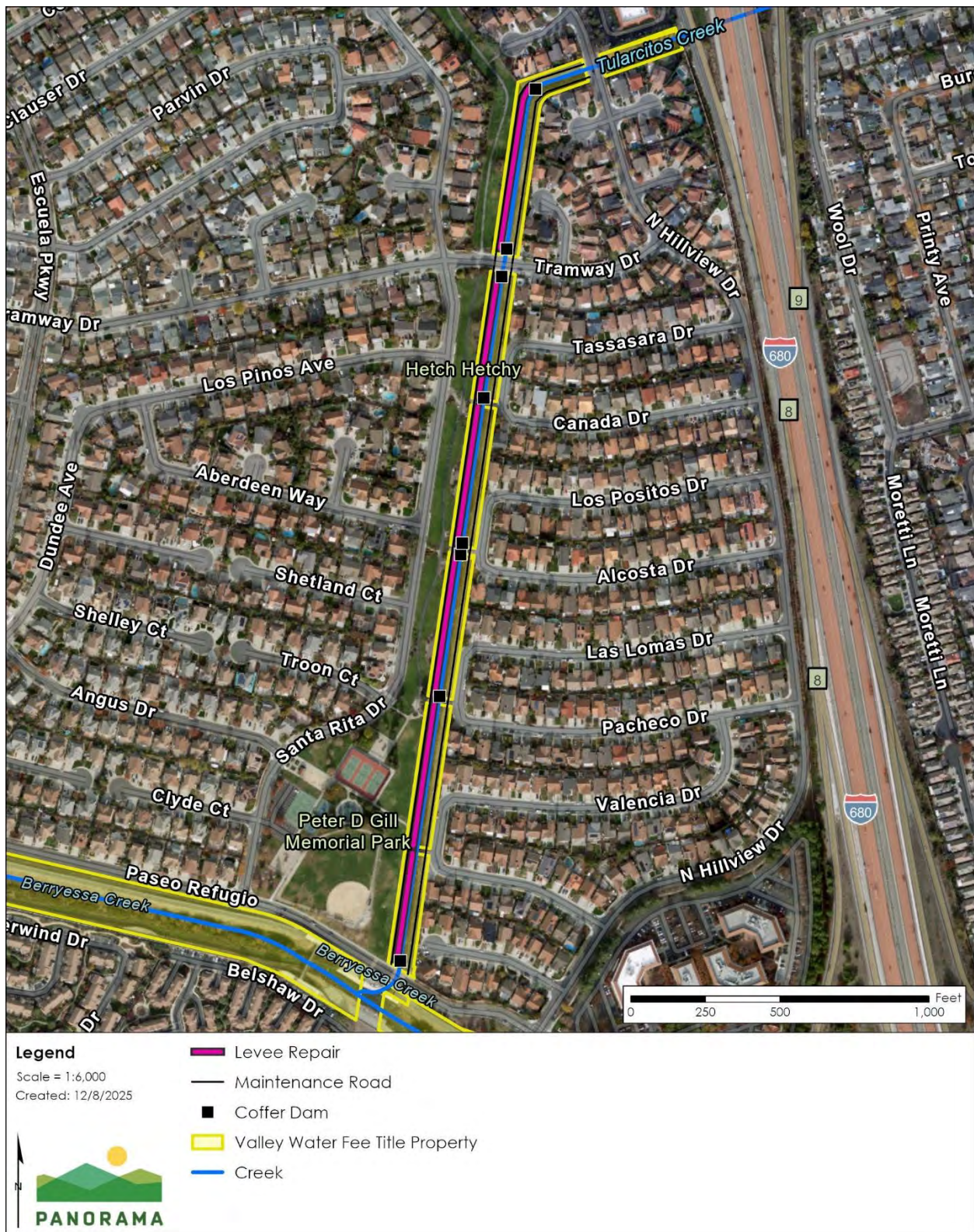


**Figure 1      Regional Overview**





**Figure 2 Project Location**



### 3.0 ANALYSIS METHODOLOGY

Intermittent (short-term construction emissions that occur from activities, such as 1) temporary access ramp installation/removal, 2) grading and excavation, 3) bank stabilization, and 4) finished grading were evaluated. The analysis focuses on daily emissions from construction activities. The air quality analysis is consistent with the methods described in the BAAQMD *CEQA Air Quality Guidelines*. Mitigation measures are presented to reduce impacts to less than significant, where applicable.

The air quality analysis includes a review of criteria pollutant<sup>1</sup> emissions such as carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), volatile organic compounds (VOC) as reactive organic gases (ROG), particulate matter less than 10 micrometers (coarse particulate or PM<sub>10</sub>), and particulate matter less than 2.5 micrometers (fine particulate or PM<sub>2.5</sub>).

Regulatory models used to estimate air quality impacts include:

- California Air Pollution Officers Association (CAPCOA) CalEEMod (California Emissions Estimator Model Version 2022.1)<sup>2</sup> is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria air pollutants and GHG emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

### 4.0 EXISTING CONDITIONS

The project sites are located within the San Francisco Bay Area Air Basin (Air Basin), which encompasses Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin, and Napa Counties, and the southern portions of Solano and Sonoma Counties. The Air Basin is characterized by complex terrain which distorts normal wind flow patterns, consisting of coastal mountain ranges, inland valleys, and bays.

#### Meteorological Conditions

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions, including wind speed, wind direction, stability, and air temperature, in combination with local surface topography (i.e., geographic features such as mountains, valleys, and San Francisco Bay), determine the effect of air pollutant emissions on local air quality.

The climate of the Air Basin, including San Jose, is a Mediterranean-type climate characterized by warm, dry summers and mild, wet winters. The climate is determined largely by a high-pressure system that is

---

<sup>1</sup> Criteria air pollutants refer to those air pollutants for which the USEPA and CARB has established National Ambient Air Quality Standards and California Ambient Air Quality Standards under the Federal Clean Air Act.

<sup>2</sup> California Air Pollution Officers Association, *California Emissions Estimator Model User Guide Version 2022.1*, April 2022, <http://www.caleemod.com/>

often present over the eastern Pacific Ocean off the West Coast of North America. In winter, the Pacific high-pressure system shifts southward, allowing storms to pass through the region. During summer and fall, air emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are favorable to the formation of photochemical pollutants, such as ozone and secondary particulates, such as sulfates and nitrates.

The project site lies in the Santa Clara Valley climatological sub-region of the Bay Area. The northwest-southeast oriented Santa Clara Valley is bounded by the Santa Cruz Mountains to the west, the Diablo Range to the east, the San Francisco Bay to the north and the convergence of the Gabilan Range and the Diablo Range to the south. Temperatures are warm in summer, under mostly clear skies, although a relatively large diurnal range results in cool nights. Winter temperatures are mild, except for very cool but generally frostless mornings. At the northern end of the Santa Clara Valley, the San Jose Airport mean maximum temperatures range from the high 70's to the low 80's during the summer to the high 50's-low 60's during the winter, and mean minimum temperatures range from the high 50's during the summer to the low 40's during the winter.

The wind patterns in the Valley are influenced greatly by the terrain, resulting in a prevailing flow roughly parallel to the Valley's northwest-southeast axis with a north-northwesterly sea breeze extending up the valley during the afternoon and early evening and a light south-southeasterly drainage flow occurring during the late evening and early morning. In summer a convergence zone is sometimes observed in the southern end of the Valley between Gilroy and Morgan Hill when air flowing from Monterey Bay through the Pajaro Gap gets channeled northward into the south end of the Santa Clara Valley and meets with the prevailing north-northwest winds. Speeds are greatest in the spring and summer, and least in the fall and winter. seasons. Nighttime and early morning hours have light winds and are frequently calm in all seasons, while summer afternoon and evenings are quite breezy. Strong winds are rare, coming only with an occasional winter storm.<sup>3</sup>

## **Criteria Air Pollutants**

The following provides a summary of the potential health and welfare effects and typical sources of each of the criteria air pollutants and air toxics.

### **Ozone**

Ozone (or O<sub>3</sub>) is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. O<sub>3</sub> is not emitted directly into the atmosphere but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving VOC and NO<sub>x</sub>. VOC and NO<sub>x</sub> are known as precursor compounds for O<sub>3</sub>. Substantial ozone production generally requires O<sub>3</sub> precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. O<sub>3</sub> is a regional air pollutant because it is not emitted directly by sources but is formed downwind of sources of VOC and NO<sub>x</sub> under the influence of wind and

---

<sup>3</sup> Bay Area Air Quality Management District, *Climate, Physiography, and Air Pollution Potential – Bay Area and Its Subregions*.



sunlight. O<sub>3</sub> concentrations tend to be higher in the late spring, summer, and fall, when long sunny days combine with regional air subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds.

### **Carbon Monoxide**

CO is a nonreactive pollutant that is a product of incomplete combustion of organic material, and is mostly associated with motor vehicle traffic, and in wintertime, with wood-burning stoves and fireplaces. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity, resulting in reduced levels of oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia. CO measurements and modeling were important in the early 1980s when CO levels were regularly exceeded throughout California, but in more recent years, CO measurements and modeling are not a priority in most California air districts due to the retirement of older vehicles, fewer emissions from new vehicles, and improvements to fuels.

### **Nitrogen Oxides**

When combustion temperatures are extremely high, as in aircraft, truck and automobile engines, atmospheric nitrogen combines with oxygen to form various oxides of nitrogen. Nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) are the most significant air pollutants generally referred to as NO<sub>x</sub>. Nitric oxide is a colorless and odorless gas that is relatively harmless to humans, quickly converts to NO<sub>2</sub> and can be measured. Nitrogen dioxide has been found to be a lung irritant capable of producing pulmonary edema. Inhaling NO<sub>2</sub> can lead to respiratory illnesses such as bronchitis and pneumonia.

### **Volatile Organic Compounds**

VOC means any compound of carbon, excluding carbon monoxide, carbon dioxide (CO<sub>2</sub>), carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions and thus, is a precursor of ozone formation. VOC includes a variety of chemicals, some of which may have short- and long-term adverse health effects. VOC are emitted by a wide array of products numbering in the thousands. Examples include paints and lacquers, paint strippers, cleaning supplies, building materials and furnishings, as well as fuel storage and use.

VOC can cause eye, nose, and throat irritation; headaches, loss of coordination, nausea; and damage to liver, kidney, and central nervous system. Some organics can cause cancer in animals; some are suspected or known to cause cancer in humans. The ability of organic chemicals to cause health effects varies greatly from those that are highly toxic, to those with no known health effects. As with other pollutants, the extent and nature of the health effect will depend on many factors including level of exposure and length of time exposed. Eye and respiratory tract irritation, headaches, dizziness, visual disorders, and memory

impairment are among the immediate symptoms that some people have experienced soon after exposure to some organics.

### **Particulate Matter**

PM<sub>10</sub> and PM<sub>2.5</sub> consist of airborne particles that measure 10 micrometers or less in diameter and 2.5 micrometers or less in diameter, respectively. PM<sub>10</sub> and PM<sub>2.5</sub> represent fractions of particulate matter that can be inhaled into the air passages and the lungs, causing adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, wood burning stoves and fireplaces, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition, construction activities and mining, are more local in nature, while others such as vehicular traffic and wood burning stoves and fireplaces, have a more regional effect.

Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates can also damage materials and reduce visibility. Dust comprised of large particles (diameter greater than 10 micrometers) settles out rapidly and is easily filtered by human breathing passages. This dust is of concern more as a soiling nuisance rather than a health hazard. The remaining fractions, PM<sub>10</sub> and PM<sub>2.5</sub>, are a health concern particularly at levels above the federal and California ambient air quality standards. PM<sub>2.5</sub> (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and thus penetrate to the deepest parts of the lungs.

Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, coughing, bronchitis, and respiratory illnesses in children. Mortality studies since the 1990s have shown a statistically significant direct association between mortality (premature deaths) and daily concentrations of particulate matter in the air. Despite important gaps in scientific knowledge and continued reasons for some skepticism, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health. The CARB has estimated that achieving the ambient air quality standards for PM<sub>10</sub> could reduce premature mortality rates by 6,500 cases per year.

### **Sulfur Dioxide**

SO<sub>2</sub> is a combustion product of sulfur or sulfur-containing fuels such as coal and diesel. SO<sub>2</sub> is also a precursor to the formation of atmospheric sulfate and particulate matter and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

### **Lead**

Lead has a range of adverse neurotoxin health effects and was released into the atmosphere via leaded gasoline products. The phase-out of leaded gasoline in California has resulted in dramatically decreased levels of atmospheric lead. Metal processing is currently the primary source of lead emissions in the SCAB. The highest concentrations of lead in air are generally found near lead smelters and general aviation airports; where piston aircraft use leaded fuel. Other stationary sources that generate lead emissions include waste incinerators, utilities, and lead-acid battery manufacturers.

## **Sulfates**

Sulfates are the fully oxidized ionic form of sulfur produced when sulfur dioxide is fully oxidized in the atmosphere. Sulfates are produced by emissions from automobiles, power plants, and industrial activity, and contribute to general atmospheric haziness. Typical health effects associated with exposure to sulfates include respiratory illness and an increased risk of cardio-pulmonary disease.

## **Vinyl Chloride**

Vinyl chloride is an artificially created colorless gas with a mild, slightly sweet odor. The gas is used in the manufacture of vinyl products, including polyvinyl chloride plastic. Vinyl chloride emissions are produced from the vinyl manufacturing process as well as from the breakdown of vinyl products in landfills and hazardous waste sites. The health effects associated with vinyl chloride include dizziness, headaches, and drowsiness from short-term exposure, and liver damage and cancer resulting from long-term exposure.

## **Hydrogen Sulfide**

H<sub>2</sub>S is a naturally occurring, colorless gas that at low concentrations produces a distinctive rotten egg odor. At higher concentrations, olfactory fatigue prevents detection of odor. The gas is produced through the bacteriological breakdown of organic materials as well as during oil and gas production and geothermal power generation. Health effects associated with H<sub>2</sub>S include exposure to a disagreeable odor, coughing, irritation to eyes, and impairment of the respiratory system.

## **Visibility Reducing Particles**

Visibility reducing particles are particulate matter composed of many different substances that are suspended in the atmosphere and contribute to haze and diminished visibility.

## **Ambient Air Quality Standards**

Regulation of air pollutants is achieved through both national and state ambient air quality standards and emissions limits for individual sources. Regulations implementing the federal Clean Air Act and its subsequent amendments established National Ambient Air Quality Standards (NAAQS) for the six criteria pollutants. California has adopted more stringent California Ambient Air Quality Standards (CAAQS) for most of the criteria air pollutants. In addition, California has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Because of the meteorological conditions in the state, there is considerable difference between state and federal standards in California.

The NAAQS and CAAQS are intended to protect public health and welfare, and they incorporate an adequate margin of safety. They are designed to protect those segments of the public most susceptible to respiratory distress, known as sensitive receptors, including asthmatics, the very young, elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels somewhat above the ambient air quality standards before adverse health effects are observed.

Under amendments to the federal Clean Air Act, USEPA has classified air basins or portions thereof, as either “attainment” or “non-attainment” for each criteria air pollutant, based on whether or not the NAAQS have been achieved. The California Clean Air Act, which is patterned after the federal Clean Air

Act, also requires areas to be designated as “attainment” or “non-attainment” for the CAAQS. Thus, areas in California have two sets of attainment/non-attainment designations: one set with respect to the NAAQS and one set with respect to the CAAQS.

## **Toxic Air Contaminants**

Toxic air contaminants (TAC) are regulated under both state and federal laws. Federal laws use the term “Hazardous Air Pollutants” (HAP) to refer to the same types of compounds that are referred to as TAC under state law. Both terms encompass essentially the same compounds. Under the 1990 Federal Clean Air Act Amendments, 189 substances are regulated as HAP.

With respect to state law, in 1983 the California legislature adopted Assembly Bill 1807 (AB 1807), which establishes a process for identifying TAC and provides the authority for developing retrofit air toxics control measures on a statewide basis. Air toxics in California may also be regulated because of another state law, the Air Toxics “Hot Spots” Information and Assessment Act of 1987, or Assembly Bill 2588 (AB 2588). Under AB 2588, TAC from individual facilities must be quantified and reported to the local air pollution control agency. The facilities are then prioritized by the local agencies based on the quantity and toxicity of these emissions, and on their proximity to areas where the public may be exposed. In establishing priorities, the air districts are to consider the potency, toxicity, quantity, and volume of hazardous materials released from the facility, the proximity of the facility to potential receptors, and any other factors that the air district determines may indicate that the facility may pose a significant risk. High priority facilities are required to perform a Health Risk Screening Assessment, and if specific risk thresholds are exceeded, they are required to communicate the results to the public in the form of notices and public meetings. Depending on the health risk levels, emitting facilities can be required to implement varying levels of risk reduction measures. CARB identified approximately 200 TAC, including the 189 federal HAP, under AB 2588.

## **Regional Clean Air Plan**

On April 20, 2017, BAAQMD released the *2017 Clean Air Plan*.<sup>4</sup> The 2017 Clean Air Plan/Regional Climate Protection Strategy (CAP/RCPS) provides a roadmap for BAAQMD’s efforts over the next few years to reduce air pollution and protect public health and the global climate. Measures of the 2017 CAP addressing the transportation sector are in direct support of *Plan Bay Area 2040*, which was prepared by the Association of Bay Area Governments and the Metropolitan Transportation Commission and includes the region’s Sustainable Communities Strategy and the 2040 Regional Transportation Plan.

Highlights of the 2017 Clean Air Plan control strategy include:

- Limit Combustion: Develop a region-wide strategy to improve fossil fuel combustion efficiency at industrial facilities, beginning with the three largest sources of industrial emissions: oil refineries, power plants, and cement plants.

---

<sup>4</sup> Bay Area Air Quality Management District, *2017 Clean Air Plan*, April 20, 2017, [http://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a\\_-proposed-final-cap-vol-1-pdf.pdf?la=en](http://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en)



- **Stop Methane Leaks:** Reduce methane emissions from landfills, and oil and natural gas production and distribution.
- **Reduce Exposure to Toxics:** Reduce emissions of toxic air contaminants by adopting more stringent limits and methods for evaluating toxic risks at existing and new facilities.
- **Put a Price on Driving:** Implement pricing measures to reduce travel demand.
- **Advance Electric Vehicles:** Accelerate the widespread adoption of electric vehicles.
- **Promote Clean Fuels:** Promote the use of clean fuels and low or zero carbon technologies in trucks and heavy-duty vehicles.
- **Accelerate Low-Carbon Buildings:** Expand the production of low-carbon, renewable energy by promoting on-site technologies such as rooftop solar and ground-source heat pumps.
- **Support More Energy Choices:** Support of community choice energy programs throughout the Bay Area.
- **Make Buildings More Efficient:** Promote energy efficiency in both new and existing buildings.
- **Make Space and Water Heating Cleaner:** Promote the switch from natural gas to electricity for space and water heating in Bay Area buildings.

When a lead agency contemplates approving a project where an air quality plan consistency determination is required, BAAQMD recommends that the agency analyze the project with respect to the following questions: (1) Does the project support the primary goals of the air quality plan; (2) Does the project include applicable control measures from the air quality plan; and (3) Does the project disrupt or hinder implementation of any control measures from the air quality plan? If the first two questions are concluded in the affirmative and the third question concluded in the negative, the BAAQMD considers the project consistent with the air quality plan prepared for the Bay Area.

## Local Air Quality

The BAAQMD maintains a network of monitoring stations within the Air Basin that monitor air quality and compliance with applicable ambient standards. Two monitoring stations are located near the project sites in San Jose: 158B Jackson Street and 1007 Knox Avenue. The monitoring station at 158 East Jackson Street measures CO, NO<sub>2</sub>, ozone, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>, however, PM<sub>10</sub> monitoring was discontinued in 2022. The monitoring station at 1007 Knox Avenue measures CO, NO<sub>2</sub>, ozone, and PM<sub>2.5</sub>. **Table 1: Air Quality Data Summary (2022 - 2024)** summarizes the most recent three years of data (2022 through 2024)<sup>5</sup> from the BAAQMD's 1007 Knox Avenue monitoring station for CO, NO<sub>2</sub>, and PM<sub>2.5</sub> and 158 East Jackson Street monitoring station for ozone, SO<sub>2</sub>, and PM<sub>10</sub>.

---

<sup>5</sup> As of February of 2026, data from 2025 was not available.

**Table 1: Air Quality Data Summary (2022 - 2024)**

| Pollutant                                                                                        | Monitoring Data by Year |              |             |        |
|--------------------------------------------------------------------------------------------------|-------------------------|--------------|-------------|--------|
|                                                                                                  | Standard <sup>a</sup>   | 2022         | 2023        | 2024   |
| <b>Ozone</b>                                                                                     |                         |              |             |        |
| Highest 1 Hour Average (ppm) <sup>b</sup>                                                        | 0.090/-                 | <b>0.090</b> | 0.087       | 0.040  |
| Highest 8 Hour Average (ppm) <sup>b</sup>                                                        | 0.070                   | <b>0.074</b> | 0.068       | 0.035  |
| <b>Nitrogen Dioxide (NO<sub>2</sub>)</b>                                                         |                         |              |             |        |
| Highest 1 Hour Average (ppm) <sup>b</sup>                                                        | 0.180/0.100             | 0.0508       | 0.0482      | 0.0354 |
| Annual Average (µg/m <sup>3</sup> ) <sup>b</sup>                                                 | 0.030/0.053             | 0.0134       | 0.0113      | 0.0152 |
| <b>Carbon Monoxide (CO)</b>                                                                      |                         |              |             |        |
| Highest 1 Hour Average (ppm) <sup>b</sup>                                                        | 20/35                   | 1.8          | 2.2         | 1.5    |
| Highest 8 Hour Average (ppm) <sup>b</sup>                                                        | 9/9                     | 1.5          | 1.3         | 1.3    |
| <b>Particulate Matter (PM<sub>10</sub>)</b>                                                      |                         |              |             |        |
| Highest 24-Hour Average (µg/m <sup>3</sup> ) <sup>b</sup>                                        | 50/150                  | 44.0         | NA          | NA     |
| State Annual Average (µg/m <sup>3</sup> ) <sup>b</sup>                                           | 20/-                    | <b>20.8</b>  | NA          | NA     |
| <b>Particulate Matter (PM<sub>2.5</sub>)</b>                                                     |                         |              |             |        |
| Highest 24-Hour Average (µg/m <sup>3</sup> ) <sup>b</sup>                                        | -/35                    | 34.7         | <b>46.2</b> | 29.0   |
| State Annual Average (µg/m <sup>3</sup> ) <sup>b</sup>                                           | 12/9                    | 8.74         | 6.50        | 7.38   |
| <b>Sulfur Dioxide (SO<sub>2</sub>)</b>                                                           |                         |              |             |        |
| Highest 1 Hour Average (ppm) <sup>b</sup>                                                        | 0.25/0.75               | 0.002        | 0.036       | 0.005  |
| Highest 3 Hour Average (ppm) <sup>b</sup>                                                        | 0.04/0.14               | 0.0016       | 0.012       | 0.019  |
| NOTES: Values in <b>bold</b> are in excess of at least one applicable standard.                  |                         |              |             |        |
| a. Generally, state standards/national standards are not to be exceeded more than once per year. |                         |              |             |        |
| b. ppm = parts per million; µg/m <sup>3</sup> = micrograms per cubic meter.                      |                         |              |             |        |

Source: United States Environmental Protection Agency, AirData, <https://www.epa.gov/outdoor-air-quality-data/interactive-map-air-quality-monitors>

The state and national 8-hour ozone standards were exceeded in 2022. The annual PM<sub>10</sub> standard was exceeded in 2022. The 24-hour PM<sub>2.5</sub> standard was exceeded in 2023. PM<sub>10</sub> and PM<sub>2.5</sub> concentrations may have been adversely affected by wildfires. No other standards were exceeded during the three-year period.

The Bay Area is currently designated “nonattainment” for state and national (1-hour and 8-hour) ozone standards, for the state PM<sub>10</sub> standards, and for the state and national (annual average and 24-hour) PM<sub>2.5</sub> standards. The Bay Area is designated “attainment” or “unclassifiable” with respect to the other ambient air quality standards.

## Community Air Risk Evaluation

The BAAQMD’s Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor air toxics in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed four percent of the cancer risk-weighted emissions, and benzene contributed three percent. Collectively, five compounds—diesel PM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All these compounds are associated with emissions from internal

combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory accounted for CARB's diesel regulations. Overall, cancer risk from TAC dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for state diesel regulations and other reductions.<sup>6</sup>

Modeled cancer risks from TAC were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. Peak modeled risks were found to be located east of San Francisco, near West Oakland, and the maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

- Western Contra Costa County and the cities of Richmond and San Pablo (west of I-80).
- Western Alameda County along the Interstate 880 corridor and the cities of Berkeley, Alameda, Oakland, and Hayward.
- San Jose.
- Eastern side of San Francisco.
- Concord.
- Vallejo.
- Pittsburgh and Antioch.

The project is within the City of Milpitas which is part of the seven CARE program impacted communities in the Bay Area.<sup>7</sup> The health impacts in the Bay Area, as determined both by pollution levels and by existing health vulnerabilities in a community, are approximately 160 cancer risk per million persons. For the city of San Jose, the health impact is approximately 172 cancer risk per million persons.<sup>8</sup>

## Addressing Sources of Air Pollutants in Community Planning

In May of 2016, the BAAQMD published *Planning Healthy Places: A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning*.<sup>9</sup> The BAAQMD's primary goal in providing the *Guidebook* is to support and promote infill development, which is important to reducing vehicle miles traveled and

---

<sup>6</sup> Bay Area Air Quality Management District, *Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program Retrospective & Path Forward (2004 – 2013)*, April 2014, [http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE\\_Retro\\_spective\\_April2014.ashx?la=en](http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retro_spective_April2014.ashx?la=en)

<sup>7</sup> Community Air Risk Evaluation Program, *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area*, March 2014

<sup>8</sup> Bay Area Air Quality Management District, *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area*, March 2014

<sup>9</sup> Bay Area Air Quality Management District, *Planning Healthy Places: A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning*, May 2016, [https://www.baaqmd.gov/~media/files/planning-and-research/planning-healthy-places/php\\_may20\\_2016-pdf.pdf?la=en](https://www.baaqmd.gov/~media/files/planning-and-research/planning-healthy-places/php_may20_2016-pdf.pdf?la=en)

the associated air emissions, while minimizing air pollution exposure for existing and future residents. The *Guidebook* provides developers and planners with the information and tools needed to create health-protective communities.

The *Guidebook* recommends Best Practices to Reduce Emissions and Reduce Exposure to Local Air Pollution. Implementing as many Best Practices to Reduce Emissions as is feasible will reduce potential health risks to the greatest extent. The *Guidebook* also lists examples of a variety of strategies to reduce exposure to, and emissions of, air pollution, including the adoption of air quality-specific ordinances, standard conditions of approval, and incorporation of policies into general plans and other planning documents. The BAAQMD recommends implementing all best practices to reduce exposure that are feasible and applicable to a project in areas that are likely to experience elevated levels of air pollution. To reduce exposure to pollutants, the *Guidebook* recommends practices like installing indoor air filtration systems, planting dense vegetation, implementing project design which provides a buffer between sensitive receptors and emission source, and developing alternative truck routes.

The *Guidebook* provides an interactive map of the Bay Area showing areas with estimated elevated levels of fine particulates and/or toxic air contaminants. The interactive map shows locations where further study is needed, such as a detailed health risk assessment; specifically, locations next to major roads and freeways and large industrial sites, as well as the downtown districts of cities.

### **Nearby Sensitive Receptors**

Land uses such as schools, children's daycare centers, hospitals, and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. The CARB has identified the following people as most likely to be affected by air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and those with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive population groups.

Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas, because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational uses are also considered sensitive, due to the greater exposure to ambient air quality conditions and because the presence of pollution detracts from the recreational experience. According to the BAAQMD, workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupation Safety and Health Administration to ensure the health and well-being of their employees.

The project site is in a suburban residential neighborhood. Nearby uses include single-family residences to the east, north, and west, open space to the west, and recreational uses to the west. The project site is within approximately 50 feet of nearby residences east of the project site, approximately 70 feet of nearby residences to the north, and approximately 150 feet of nearby residences to the west. Peter Gill Memorial Park is located approximately 200 feet to the west of the levee; within the southern portion of the proposed project.

According to the requirements under the California Public Resources Code, Division 13, Environmental Quality (§21000 – §21189.57), a project located within ¼ mile of a school that involve the construction or alteration of a facility that might reasonably be anticipated to emit hazardous air emissions, and that may impose a health or safety hazard to persons who would attend or would be employed at the school, must meet all requirements per CEQA Guidelines §15186 (b)(1)(2).<sup>10</sup> The lead agency must consult with the affected school district or districts regarding the potential impact of the project on the school and notify the affected school district(s) of the project in writing, not less than 30 days prior to approval or certification of the negative declaration or environmental impact report. There are no schools within ¼ mile of the project sites.

## **City of Milpitas 2040 General Plan**

The *City of Milpitas 2040 General Plan* (General Plan) is a planning document that defines a long-term vision for the city over the next 20 years. The City of Milpitas updated and adopted its current *General Plan* in March 2021.<sup>11</sup> Applicable goals and policies related to air quality from the *General Plan* are the following:

**Goal:** Implement a proactive approach to maintain and improve air quality within Milpitas and the region.

**Policy:** Ensure that land use and transportation plans support air quality goals through a logical development pattern that focuses growth in and around existing urbanized areas, locates new housing near places of employment, encourages alternative modes of transportation, supports efficient parking strategies, reduces vehicle miles traveled, and requires projects to mitigate significant air quality impacts.

**Policy:** Minimize exposure of the public to toxic or harmful air emissions and odors through requiring an adequate buffer or setback distance between residential and other sensitive land uses and land uses that typically generate air pollutants, toxic air contaminants, or obnoxious fumes or odors, including but not limited to industrial, manufacturing, and processing facilities, high-volume roadways, and industrial rail lines. New sensitive receptors, such as residences (including residential care and assisted living facilities for the elderly), childcare centers, schools, playgrounds, churches, and medical facilities shall be located away from existing point sources of air pollution such that excessive levels of exposure do not result in unacceptable health risks. Compliance shall be verified through the preparation of a health risk assessment when deemed necessary by the Planning Director.

**Policy:** Require projects which generate high levels of air pollutants, such as heavy industrial, manufacturing facilities and hazardous waste handling operations, to incorporate air quality mitigations in their design to reduce impacts to the greatest extent feasible.

**Policy:** Require projects to adhere to the requirements of the BAAQMD.

**Policy:** Use the City's development review process and the CEQA to evaluate and mitigate the local and cumulative effects of new development on air quality.

---

<sup>10</sup> 2019 CEQA Statutes and Guidelines, [http://resources.ca.gov/ceqa/docs/2019\\_CEQA\\_Statutes\\_and\\_Guidelines.pdf](http://resources.ca.gov/ceqa/docs/2019_CEQA_Statutes_and_Guidelines.pdf)

<sup>11</sup> Milpitas 2040 General Plan, March 9, 2021, <https://www.milpitas.gov/370/Milpitas-2040-General-Plan>

**Policy:** Coordinate with CARB and the BAAQMD to properly measure air quality emission sources and enforce the standards of the Clean Air Act.

**Policy:** Comply with regional, state, and federal standards and programs for control of all airborne pollutants and noxious odors, regardless of source.

**Policy:** Consider the health risks associated with TAC when reviewing development applications.

**Policy:** Coordinate with Santa Clara County and nearby cities to implement regional GHG reduction plans and to consolidate efforts to reduce GHG throughout the county as appropriate.

**Policy:** Implement policies and action from the Land Use and Circulation Elements to provide mixed-use developments, locate high-density uses near transit facilities, provide neighborhood-serving retail uses convenient to residential neighborhoods, and other Transportation Demand Management programs that would reduce vehicle trips and vehicle miles traveled, thus reducing air-pollutant emissions.

**Policy:** Encourage improvements and design features that reduce vehicle delays such as bus turnouts, and synchronized traffic signals for new development to reduce excessive vehicle emissions caused by idling.

**Policy:** Encourage and prioritize infrastructure investments and improvements that promote safe walking, bicycling and increased transit ridership.

**Policy:** Implement energy policies and actions that have co-benefits of reduced air pollution and GHG by increasing energy efficiency, conservation, and the use of renewable resources.

## 5.0 THRESHOLDS OF SIGNIFICANCE

The significance of potential impacts was determined based on State CEQA Guidelines, Appendix G, and the BAAQMD *CEQA Air Quality Guidelines*. Using Appendix G evaluation thresholds, a project would be considered to have significant air quality impacts if it were to:

- A. Conflict with or obstruct implementation of the applicable air quality plan;
- B. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
- C. Expose sensitive receptors to substantial pollutant concentrations; or
- D. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The thresholds and methodologies from the BAAQMD's *CEQA Air Quality Guidelines* were used to evaluate the potential impacts of construction. The applicable thresholds of significance applied to assess project-level air quality impacts are:

- Average daily construction exhaust emissions of 54 pounds per day of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> or 82 pounds per day of PM<sub>10</sub>;
- Average daily operation emissions of 54 pounds per day of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> or 82 pounds per day of PM<sub>10</sub>; or result in maximum annual emissions of 10 tons per year of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> or 15 tons per year of PM<sub>10</sub>; or



- Frequently and for a substantial duration, create or expose sensitive receptors to substantial objectionable odors affecting a substantial number of people.

The BAAQMD air quality significance thresholds are found in **Table 2: BAAQMD Air Quality Significance Thresholds**.

**Table 2: BAAQMD Air Quality Significance Thresholds**

| Pollutant                                    | Construction<br>Thresholds   | Daily Operational<br>Thresholds        | Annual Operational<br>Thresholds |
|----------------------------------------------|------------------------------|----------------------------------------|----------------------------------|
| Criteria Air Pollutants                      |                              |                                        |                                  |
| ROG                                          | 54                           | 54                                     | 10                               |
| NOx                                          | 54                           | 54                                     | 10                               |
| PM <sub>10</sub>                             | 82<br>(exhaust only)         | 82                                     | 15                               |
| PM <sub>2.5</sub>                            | 54<br>(exhaust only)         | 54                                     | 10                               |
| CO                                           | NA                           | 9.0 ppm (8-hour) and 20.0 ppm (1-hour) |                                  |
| Fugitive Dust                                | Best Management<br>Practices | NA                                     |                                  |
| Project Health Risk and Hazards              |                              |                                        |                                  |
| Excess Cancer Risk                           | 10 per million               |                                        |                                  |
| Chronic Hazard Index                         | 1.0                          |                                        |                                  |
| Acute Hazard Index                           | 1.0                          |                                        |                                  |
| Incremental Annual Average PM <sub>2.5</sub> | 0.3 µg/m <sup>3</sup>        |                                        |                                  |
| Cumulative Health Risk and Hazards           |                              |                                        |                                  |
| Excess Cancer Risk                           | 100 per million              |                                        |                                  |
| Chronic Hazard Index                         | 10.0                         |                                        |                                  |
| Acute Hazard Index                           | 10.0                         |                                        |                                  |
| Incremental Annual Average PM <sub>2.5</sub> | 0.8 µg/m <sup>3</sup>        |                                        |                                  |

SOURCE: BAAQMD Adopted Air Quality CEQA Thresholds of Significance – April 2023, [https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-3-thresholds\\_final\\_v2-pdf.pdf?rev=a976830cce0c4a6bb624b020f72d25b3&sc\\_lang=en](https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-3-thresholds_final_v2-pdf.pdf?rev=a976830cce0c4a6bb624b020f72d25b3&sc_lang=en)

## 6.0 EMISSIONS INVENTORY

Intermittent (short-term construction emissions that occur from activities, such as grading were evaluated. The analysis focuses on daily emissions from construction activities. CalEEMod was used to quantify construction-related emissions. CalEEMod output worksheets are included in **Attachment A: Construction Emissions Inventory Supporting Information**. The emissions generated from these construction activities include:

- Dust (including PM<sub>10</sub> and PM<sub>2.5</sub>) primarily from “fugitive” sources (i.e., emissions released through means other than through a stack or tailpipe) such as material handling and travel on unpaved surfaces; and

- Combustion exhaust emissions of criteria air pollutants (ROG, NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub>) primarily from off-road construction equipment, haul trucks, (primarily diesel-operated), and construction worker automobile trips (primarily gasoline-operated).
- VOC as ROG primarily from “fugitive” sources such as architectural coating and paving.

Fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. High winds (greater than 10 miles per hour) occur infrequently in the area, less than two percent of the time. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM<sub>10</sub> concentrations may be adversely affected on a temporary and intermittent basis during construction. In addition, the fugitive dust generated by construction would include not only PM<sub>10</sub>, but also larger particles, which would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts.

Construction activities would be conducted from 7 a.m. to 7 p.m. Monday through Friday. Onsite generators (one primary and one backup) would operate 24 hours per day, seven days per week for the duration of the project. Project construction is anticipated to begin early June of 2027 and be completed in October of 2027 (a total of 120 construction days). **Table 3: Construction Schedule** provides the construction schedule by construction activity.

An estimated 13,250 cubic yards of levee fill materials and 2,600 cubic yards of boulders would be imported to the project site and 13,900 cubic yards of materials would be exported offsite. Project construction would result in a total of 0.37 acres of ground disturbance at the project site. Approximately 30 haul truck trips would be required.

**Table 3: Construction Schedule**

| Construction Activity  | Start      | End        | Working Days |
|------------------------|------------|------------|--------------|
| Temporary Access       | 06/15/2027 | 06/18/2027 | 4            |
| Grading and Excavation | 06/21/2027 | 10/01/2027 | 75           |
| Bank Stabilization     | 06/21/2027 | 10/01/2027 | 75           |
| Finished Grading       | 10/04/2027 | 10/15/2027 | 10           |

The estimated construction equipment associated with the proposed project along with the number of pieces of equipment, daily hours of operation, horsepower (hp), and load factor (i.e., percent of full throttle) are shown in **Table 4: Estimated Construction Equipment Usage**.

The dewatering system set up would comprise cofferdams, two 50 hp generators (one primary and one backup), and 6-inch-to-10-inch sump pumps with approximately 700 feet of bypass pipes and hoses. Earthen cofferdams would be installed upstream and downstream of the project site, with pipes running through and under the temporary construction ramp and discharging flows downstream of the project site. Generators would be placed along the top of the levee banks.

**Table 4: Estimated Construction Equipment Usage**

| Construction Activity  | Equipment           | Amount | Daily Hours | HP  |
|------------------------|---------------------|--------|-------------|-----|
| Temporary Access       | Excavator           | 1      | 8           | 38  |
| Temporary Access       | Loader              | 1      | 8           | 84  |
| Temporary Access       | Sheepsfoot          | 1      | 8           | 36  |
| Temporary Access       | Skid Steer          | 1      | 8           | 71  |
| Temporary Access       | Dump Trucks         | 2      | 8           | 376 |
| Temporary Access       | Water Truck/Sweeper | 2      | 8           | 376 |
| Temporary Access       | Generators          | 2      | 24          | 50  |
| Grading and Excavation | Excavator           | 2      | 8           | 38  |
| Grading and Excavation | Loader              | 1      | 8           | 84  |
| Grading and Excavation | Sheepsfoot          | 1      | 8           | 36  |
| Grading and Excavation | Skid Steer          | 1      | 8           | 71  |
| Grading and Excavation | Dump Trucks         | 10     | 8           | 376 |
| Grading and Excavation | Water Truck/Sweeper | 2      | 8           | 376 |
| Grading and Excavation | Generators          | 2      | 24          | 50  |
| Bank Stabilization     | Excavator           | 2      | 8           | 38  |
| Bank Stabilization     | Loader              | 1      | 8           | 84  |
| Bank Stabilization     | Sheepsfoot          | 1      | 8           | 36  |
| Bank Stabilization     | Skid Steer          | 1      | 8           | 71  |
| Bank Stabilization     | Dump Trucks         | 10     | 8           | 376 |
| Bank Stabilization     | Water Truck/Sweeper | 2      | 8           | 376 |
| Bank Stabilization     | Generators          | 2      | 24          | 50  |
| Finished Grading       | Excavator           | 2      | 8           | 38  |
| Finished Grading       | Loader              | 1      | 8           | 84  |
| Finished Grading       | Sheepsfoot          | 1      | 8           | 36  |
| Finished Grading       | Skid Steer          | 1      | 8           | 71  |
| Finished Grading       | Dump Trucks         | 10     | 8           | 376 |
| Finished Grading       | Water Truck/Sweeper | 2      | 8           | 376 |
| Finished Grading       | Generators          | 2      | 24          | 50  |

Note: Additionally, five construction worker vehicle trips and the use of two pickup trucks onsite will occur during each construction phase. This equipment list provided is an estimate based on current project planning and requirements. Actual equipment usage may vary depending on on-site conditions, project needs, and any adjustments to the project schedule.

Per BAAQMD's *CEQA Air Quality Guidelines*, the reported PM<sub>10</sub> and PM<sub>2.5</sub> emissions are related to combustion exhaust only. Fugitive dust emissions are addressed via **Best Management Practice AQ-1** and **Mitigation Measure AQ-1** per BAAQMD *CEQA Air Quality Guidelines* (Table 5-2) and **Best Management Practice AQ-2**. Combustion exhaust emissions are addressed via **Mitigation Measure AQ-2**. Additionally, the project would implement **Mitigation Measure GHG-1** and **Mitigation Measure GHG-2**.

**Table 5: Estimated Average Daily Construction Emissions** provides the estimated short-term unmitigated construction emissions that would be associated with the project and compares those emissions to the BAAQMD's significance thresholds for construction exhaust emissions. The average daily construction period emissions (i.e., total construction period emissions divided by the number of actual construction

days) were compared to the BAAQMD significance thresholds. Construction-related emissions of NOx would be above the BAAQMD significance thresholds without mitigation. With **Mitigation Measure AQ-2**, all construction-related emissions would be below the BAAQMD significance thresholds. Note that mitigated CO emissions are greater than the unmitigated CO emissions due to control technologies that are focused on reducing ROG, NOx, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions, which have a reverse effect on CO emissions.

Using standard fuel consumption estimates, construction activities would require approximately 139,290 gallons of diesel fuel (haul trucks and offroad equipment) and approximately 330 gallons of gasoline (worker vehicles).<sup>12</sup>

**Table 5: Estimated Average Daily Emissions (pounds)**

| Project                                      | ROG         | NOx         | PM <sub>10</sub> | PM <sub>2.5</sub> | CO         | SO <sub>2</sub> |
|----------------------------------------------|-------------|-------------|------------------|-------------------|------------|-----------------|
| <b>Average Daily Emissions (Unmitigated)</b> | <b>12.3</b> | <b>82.6</b> | <b>2.42</b>      | <b>2.23</b>       | <b>106</b> | <b>0.37</b>     |
| Significance Threshold                       | 54          | 54          | 82               | 54                | ---        | ---             |
| Significant (Yes or No)?                     | No          | Yes         | No               | No                | No         | No              |
| <b>Average Daily Emissions (Mitigated)</b>   | <b>3.83</b> | <b>44.8</b> | <b>0.71</b>      | <b>0.71</b>       | <b>189</b> | <b>0.31</b>     |
| Significance Threshold                       | 54          | 54          | 82               | 54                | ---        | ---             |
| Significant (Yes or No)?                     | No          | No          | No               | No                | No         | No              |

SOURCE: CARB CalEEMod

#### **Best Management Practice AQ-1: BAAQMD Dust Control Measures**

The following BAAQMD Dust Control Measures will be implemented (per BAAQMD *CEQA Air Quality Guidelines*, Table 5-2 and Valley Water BMPs):

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- Water used to wash the various exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, etc.) will not be allowed to enter waterways.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations), and this requirement shall be

<sup>12</sup> Fuel usage is estimated using the CalEEMod output for CO<sub>2</sub> and a 8.78 kgCO<sub>2</sub>/gallon (gasoline) and a 10.19 kgCO<sub>2</sub>/gallon (diesel) conversion factor, [https://www.eia.gov/environment/emissions/co2\\_vol\\_mass.php](https://www.eia.gov/environment/emissions/co2_vol_mass.php)

clearly communicated to construction workers (such as verbiage in contracts and clear signage at all access points).

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications, and all equipment shall be checked by a certified visible emissions evaluator.
- Correct tire inflation shall be maintained in accordance with manufacturer's specifications on wheeled equipment and vehicles to prevent excessive rolling resistance.
- Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

#### **Mitigation Measure AQ-1: Additional BAAQMD Dust Control Measures**

The following additional BAAQMD Dust Control Measures will be implemented (per BAAQMD *CEQA Air Quality Guidelines*, Table 5-2):

- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.

#### **Mitigation Measure AQ-2: Additional Combustion Exhaust Control Measures**

Valley Water shall implement the following measures during construction to further reduce construction exhaust emissions:

All construction equipment larger than 25 horsepower used at the site for more than two continuous days or 20 hours total shall utilize diesel engines that are USEPA certified "Tier 4 Final" emission standards for particulate matter and be equipped with CARB-certified Level 3 Diesel Particulate Filters. Prior to the issuance of any demolition/construction permits, the construction contractor shall submit specifications of the equipment to be used during construction and Valley Water shall confirm this requirement is met.<sup>13</sup>

Equipment such as air compressors, concrete/industrial saws, forklifts, light stands, manlifts, pumps, and welders shall be electric or alternative-fueled (i.e., non-diesel), where feasible. Pole power shall be utilized at the earliest feasible point in time and shall be used to the maximum extent feasible in

---

<sup>13</sup>USEPA and CARB have implemented regulations and a tiering system to reduce emissions from off-road equipment with increasing combustion efficiency (i.e., decreasing emissions) where Tier 1 is the least efficient (greatest emissions) and Tier 4 is the most efficient (least emissions). The regulations have been implemented over time such that Tier 1 was phased out in the 1990's and Tier 2 was required, followed by implementation of Tier 3 and Tier 4 by 2015 with a phase out of Tier 2.

lieu of generators. If stationary construction equipment, such as diesel-powered generators, must be operated continuously, such equipment must be Tier 4 Final construction equipment or better and located at least 100 feet from air quality sensitive land uses (e.g., residences, schools, childcare centers, hospitals, parks, or similar uses), whenever possible.

At a minimum, require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year trucks (e.g., material delivery trucks and soil import/export with a gross vehicle weight rating of at least 14,001 pounds), that meet CARB's 2010 engine emissions standards or newer, cleaner trucks.

#### **Best Management Practice AQ-2: Valley Water Stream Maintenance Program Update BMPs**

Consistent with the Valley Water Stream Maintenance Program Update<sup>14</sup>, the following BMPs would also be implemented to control dust emissions and equipment exhaust emissions during the proposed project:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of work area, staging areas, and access routes are kept to the minimum area necessary to complete maintenance work to minimize the amount of fugitive dust and therefore reduce the amount of PM<sub>10</sub> emissions.
- **BMP GEN-24: Work Site Housekeeping** will ensure that the work site is kept in a clean, neat, and orderly condition to minimize the amount of fugitive dust.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to keep spoils and chemicals in designated areas which will help to minimize fugitive dust and emissions from entering sensitive areas.
- **BMP GEN-36: Dust Management** will ensure that the BAAQMD's Basic Dust Control Measures are implemented.
- **BMP GEN-37: Vehicle and Equipment Maintenance** will ensure that vehicles and equipment are properly maintained so that criteria air pollutant emissions are reduced.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** will ensure that pumps and generators will be sufficiently maintained and operated so that emissions are minimized. Generators will be stored and operated with secondary containment. Implementation of these measures will reduce the amount of exposure of exhaust emissions from the operation and maintenance of pumps and generators during channel dewatering.

#### **Regulatory Requirements:**

Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.

---

<sup>14</sup> Santa Clara Valley Water, Stream Maintenance Program Update Draft Subsequent Environmental Impact Report, July 2025, <https://www.valleywater.org/project-updates/stream-maintenance-program>

All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

The project shall require construction contractors to recycle or salvage a minimum of 65 percent of the non-hazardous construction and demolition waste generated directly from construction and demolition of the project per CalGreen Construction Waste Management Requirements.

In addition, for construction projects, regulatory requirements may include, but are not limited to, BAAQMD's Regulation 6, Rule 1 (General Requirements) and Regulation 6, Rule 6 (Prohibition of Trackout) which require dust generating operations to limit particulate matter emissions. Rule 6-1 prohibits fugitive emissions on site and BAAQMD enforcement staff are trained to document visible emissions and fugitive dust using either the opacity or the Ringlemann test methods. For construction sites, Rule 6-1 does not prescribe mitigation measures, however operators are expected to utilize standard construction management practices to comply with the fugitive dust emissions prohibition. Rule 6-6 prohibits trackout. For construction sites, Rule 6-6 does not prescribe mitigation measures, however construction operators are expected to use common operational measures and suppression techniques (i.e., trackout control devices) to minimize trackout.

## 7.0 HEALTH IMPACTS

OEHHA specifies that due to the uncertainty in assessing cancer risk from very short-term exposures, it does not recommend assessing cancer risk for projects lasting less than two months. OEHHA recommends that exposure from projects longer than two months, but less than six months be assumed to last six months while exposure from projects lasting more than six months should be evaluated for the duration of the project.

The project site is in a suburban residential neighborhood. Nearby uses include single-family residences to the east, north, and west, open space to the west, and recreational uses to the west. The project site is within approximately 50 feet of nearby residences east of the project site, approximately 70 feet of nearby residences to the north, and approximately 150 feet of nearby residences to the west. Peter Gill Memorial Park is located approximately 200 feet to the west of the levee; within the southern portion of the proposed project.

The project involves construction activities that would occur along the levee for approximately 120 working days. However, construction would not occur in any one location for more than 20 days. Project generators (one primary and one backup) would operate 24 hours per day, seven days per week during the construction activities. The generators would be placed at the top of the left bank (westside), looking downstream, as far from residential areas as possible. Therefore, a formal health risk assessment was not conducted.

Fugitive dust emissions are addressed via **Best Management Practice AQ-1** and **Mitigation Measure AQ-1** per BAAQMD *CEQA Air Quality Guidelines* (Table 5-2) and **Best Management Practice AQ-2**. Combustion exhaust emissions are addressed via **Mitigation Measure AQ-2**. Additionally, the project would implement **Mitigation Measure GHG-1** and **Mitigation Measure GHG-2**.



Based on information from San Francisco Planning Department<sup>15</sup> and the California Air Resources Board<sup>16</sup>, The projected availability in 2026 (based on the trend from 2020 to 2023), it is expected that 75 percent of construction equipment (a total of 23,594 pieces of equipment) within the Bay Area would be Tier 4 or electric.<sup>17</sup> This corresponds to a strong availability of Tier 4 Final (or electric) equipment in the Bay Area especially given the small number of pieces of equipment needed for the project. CARB data for 2020 shows that approximately 42.2 percent of the construction equipment within California are Tier 4 Final; this equates to 60,771 pieces of construction equipment.<sup>18</sup> Therefore, there would be no issues with the availability of Tier 4 Final and electric construction equipment for the proposed project and the use of Tier 4 Final and electric construction equipment would minimize the health impacts.

## 8.0 ODOR IMPACTS

Though offensive odors from stationary and mobile sources rarely cause any physical harm, they remain unpleasant and can lead to public distress, generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors. Generally, odor emissions are highly dispersive, especially in areas with higher average wind speeds. However, odors disperse less quickly during inversions or during calm conditions, which hamper vertical mixing and dispersion.

The BAAQMD's significance criteria for odors are subjective and are based on the number of odor complaints generated by a project. Generally, the BAAQMD considers any project with the potential to frequently expose members of the public to objectionable odors to cause a significant impact. With respect to the project, diesel-fueled construction equipment exhaust would generate some odors. However, these emissions typically dissipate quickly and would be unlikely to affect a substantial number of people. The project would not involve activities that generate substantial odors.

### Best Management Practice AQ-3: Avoiding Stockpile Odors

Materials with decaying organic material, or other potentially odorous materials, shall be handled in a manner that avoids impacting residential areas and other sensitive receptors, including the following:

- Avoid stockpiling potentially odorous materials within 1,000 feet of residential areas or other odor sensitive land uses.

---

<sup>15</sup> San Francisco Planning Department, *Off-Road Construction Equipment Vehicle Inventory*, October 2023, <https://sfplanning.org/air-quality>

<sup>16</sup> California Air Resources Board, *2022 CARB Construction, Industrial, Mining and Oil Drilling Emissions Inventory*, August 2022, <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022InUseDieselInventory.pdf>

<sup>17</sup> USEPA and CARB have implemented regulations and a tiering system to reduce emissions from off-road equipment with increasing combustion efficiency (i.e., decreasing emissions) where Tier 1 is the least efficient (greatest emissions) and Tier 4 is the most efficient (least emissions). The regulations have been implemented over time such that Tier 1 was phased out in the 1990's and Tier 2 was required, followed by implementation of Tier 3 and Tier 4 by 2015 with a phase out of Tier 2.

<sup>18</sup> California Air Resources Board, *2022 CARB Construction, Industrial, Mining and Oil Drilling Emissions Inventory*, August 2022, <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022InUseDieselInventory.pdf>

- Odorous stockpiles disposed of at an appropriate landfill.

Therefore, odor impacts associated with the project would be less than significant.

## **9.0 CUMULATIVE IMPACTS**

Cumulative impacts are defined in CEQA as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines Section 15355). Stated in another way, “a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts” (CEQA Guidelines Section 15130 [a][1]).

Cumulative impacts would exist when either direct air quality impacts or multiple construction projects occur within the same area simultaneously. If a project were to produce air quality emissions simultaneously to a nearby construction project, the addition of both project emissions to the environment could exceed significance thresholds. For this project, the construction emissions were found to be less than significant. If a nearby project was to be under construction at the same time, that project would need to produce an additive amount of emissions close to the project site such that emissions would exceed thresholds. Therefore, a less than significant cumulative air quality impact would be expected during the construction activities.

## **10.0 GREENHOUSE GAS EMISSIONS**

“Global warming” and “global climate change” are the terms used to describe the increase in the average temperature of the earth’s near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal, with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. Continued warming is projected to increase global average temperature between 2 and 11°F over the next 100 years.

Natural processes and human actions have been identified as the causes of this warming. The Intergovernmental Panel on Climate Change (IPCC) concludes that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. After 1950, however, increasing GHG concentrations resulting from human activity such as fossil fuel burning, and deforestation have been responsible for most of the observed temperature increase. These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion.

Increases in GHG concentrations in the earth’s atmosphere are thought to be the main cause of human-induced climate change. GHG naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Some GHG occurs naturally and are necessary for keeping the earth’s surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

Gases that trap heat in the atmosphere are referred to as GHG because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHG has been implicated as the driving force for global climate change. The primary GHG are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), ozone, and water vapor.

While the presence of the primary GHG in the atmosphere are naturally occurring, CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O are also emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Emissions of CO<sub>2</sub> are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHG include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes.

CO<sub>2</sub> is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO<sub>2</sub>. CH<sub>4</sub> and N<sub>2</sub>O are substantially more potent GHG than CO<sub>2</sub>, with GWP of 25 and 298 times that of CO<sub>2</sub>, respectively.<sup>19</sup>

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons (MT) of CO<sub>2</sub> equivalents (CO<sub>2</sub>e). CO<sub>2</sub>e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH<sub>4</sub> and N<sub>2</sub>O have much higher GWP than CO<sub>2</sub>, CO<sub>2</sub> is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO<sub>2</sub>e.

Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO<sub>2</sub> emissions (and thus substantial increases in atmospheric concentrations of CO<sub>2</sub>). In pre-industrial times (c. 1860), concentrations of atmospheric CO<sub>2</sub> were approximately 280 parts per million (ppm). By December 2025, atmospheric CO<sub>2</sub> concentrations had increased to 427.5 ppm, 55 percent above pre-industrial concentrations.<sup>20</sup>

There is international scientific consensus that human-caused increases in GHG have and will continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.<sup>21</sup>

---

<sup>19</sup> Global Warming Potential values, [https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29\\_1.pdf](https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf)

<sup>20</sup> Earth System Research Laboratory, *Recent Monthly Mean CO<sub>2</sub> at Mauna Lora*, [www.esrl.noaa.gov/gmd/ccgg/trends/](http://www.esrl.noaa.gov/gmd/ccgg/trends/)

<sup>21</sup> California Environmental Protection Agency, *2006 Final Climate Action Team Report to the Governor and Legislature*, March 2006, [https://planning.lacity.org/eir/8150Sunset/References/4.E.%20Greenhouse%20Gas%20Emissions/GHG.23\\_CalEPA%202006%20Report%20to%20Governor.pdf](https://planning.lacity.org/eir/8150Sunset/References/4.E.%20Greenhouse%20Gas%20Emissions/GHG.23_CalEPA%202006%20Report%20to%20Governor.pdf)

## **California Environmental Quality Act and Climate Change**

Under CEQA, lead agencies are required to disclose the reasonably foreseeable adverse environmental effects of projects they are considering for approval. GHG emissions have the potential to affect the environment because they contribute to global climate change. In turn, global climate change has the potential to cause sea level rise, alter rainfall and snowfall patterns, and affect habitat.

## **California Code of Regulations Title 24**

Although not originally intended to reduce greenhouse gas emissions, Title 24 of the California Code of Regulations, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow for the consideration and possible incorporation of new energy efficiency technologies and methods. Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. Therefore, increased energy efficiency results in decreased GHG emissions.

Accordingly, Title 24 in the CALGreen Building Code is now a part of the statewide strategy for reducing GHG emissions and is the only statewide plan for reduction of GHG emissions that every local agency must adopt in a public hearing by adopting the state building code. Consistent with CALGreen, the state recognized that GHG reductions would be achieved through buildings that exceed minimum energy-efficiency standards, decrease consumption of potable water, reduce solid waste during construction, and incorporate sustainable materials. Compliance with Title 24 of the CALGreen Building Code is thus a vehicle to achieve statewide electricity and natural gas efficiency targets, and lower GHG emissions from waste and water transport sectors.

## **Pavley Standards**

California AB 1493 (Pavley) enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks for model years 2009–2016, which are often times referred to as the “Pavley I” standards. The CARB obtained a waiver from the USEPA that allows for implementation of these regulations notwithstanding possible federal preemption concerns.

## **Executive Order S-3-05**

Governor Schwarzenegger established Executive Order S-3-05 in 2005, in recognition of California's vulnerability to the effects of climate change. Executive Order S-3-05 set forth a series of target dates by which statewide emissions of GHG would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the Secretary of CalEPA to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the governor and

California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of CalEPA created the California Climate Action Team, made up of members from various state agencies and commissions. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through state incentive and regulatory programs.

### **Assembly Bill 32 (California Global Warming Solutions Act of 2006)**

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction was to be accomplished by enforcing a statewide cap on GHG emissions that were to be phased in starting in 2012. To effectively implement the cap, AB 32 directed CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specified that regulations adopted in response to AB 1493 were used to address GHG emissions from vehicles. However, AB 32 also included language stating that if the AB 1493 regulations cannot be implemented, then CARB was to develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 required CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Pursuant to AB 32, CARB identified 427 million MT CO<sub>2</sub>e as the total Statewide aggregated 1990 GHG emissions level, which serves as the 2020 emissions limit. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 represented an approximate 25 to 30 percent reduction in current emissions levels. However, CARB also had discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. The goals of AB 32 were achieved within the 2002 timeline.

### **Climate Change Scoping Plans**

AB 32 also required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHG to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by CARB in 2008 and must be updated every five years. The initial AB 32 Scoping Plan contains the main strategies California will use to reduce the GHG that cause climate change. The initial Scoping Plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation fee regulation to fund the program. In August 2011, the initial Scoping Plan was approved by CARB.

The 2013 Scoping Plan Update builds upon the initial Scoping Plan with new strategies and recommendations. The 2013 Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The 2013 Update defines CARB climate change priorities for the next five years and sets the groundwork to reach California's long-term climate goals set forth in Executive Orders S-3-05 and B-16-2012. The 2013 Update highlights California progress toward meeting the near-term 2020 GHG emission reduction goals defined in the initial Scoping Plan. In the 2013 Update, nine key focus areas were identified (energy, transportation, agriculture, water, waste management, and natural and working lands), along with short-lived climate pollutants, green buildings, and the cap-and-trade program.

On May 22, 2014, the First Update to the Climate Change Scoping Plan was approved by CARB, along with the finalized environmental documents. The First Update to the Climate Change Scoping Plan identified the 2020 emissions limit as 431 million metric tons of CO<sub>2</sub>e and the 2020 business-as-usual forecast as 509 million metric tons of CO<sub>2</sub>e. Finally, the Updated Scoping Plan provided recommendations for establishing a mid-term emissions limit that aligns with the long-term (2050) goals of Executive Order S-3-05. The recommendations covered energy, transportation, agriculture, water, waste management, natural and working lands, short-lived climate pollutants, green building, and cap-and-trade sectors.

In 2017, CARB approved the Second Update to the Climate Change Scoping Plan (2017 Scoping Plan). The 2017 Scoping Plan identified progress made to meet the near-term (2020) objectives of AB 32 and defined California's climate change priorities and activities for the next several years. The 2017 Scoping Plan identified the 2020 emissions limit as 431 million metric tons of CO<sub>2</sub>e and the 2020 business-as-usual forecast as 509 million metric tons of CO<sub>2</sub>e. The 2017 Scoping Plan provided strategies for meeting the mid-term 2030 greenhouse gas reduction target set by Senate Bill (SB) 32. The 2017 Scoping Plan also identified how the State can substantially advance toward the 2050 greenhouse gas reduction target of Executive Order S-3-05, which consists of reducing greenhouse gas emissions to 80 percent below 1990 levels. The recommendations covered the key sectors, including energy and industry; transportation; natural and working lands; waste management; and water.

In 2022, CARB approved the Third Update to the Climate Change Scoping Plan (2022 Scoping Plan), which lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by Assembly Bill 1279.<sup>22</sup> The 2022 Scoping Plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 80 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.

---

<sup>22</sup> California Air Resources Board, *Final 2022 Scoping Plan Update*, November 16, 2022, <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan#:~:text=The%20Draft%202022%20Scoping%20Plan,neutrality%20no%20later%20than%202045>

- Focuses on strategies for reducing California’s dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California’s most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands to the state’s GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

The recommended measures in the 2022 Scoping Plan and previous Scoping Plans are broad policy and regulatory initiatives that will be implemented at the State level and do not relate to the construction of individual projects.

### **Federal Vehicle Standards**

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the USEPA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014 through 2018. The standards for CO<sub>2</sub> emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the USEPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.

In August 2016, the USEPA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO<sub>2</sub> emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program. On September 27, 2019, the USEPA and the NHTSA published the “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program.” (84 Fed. Reg. 51,310 (Sept. 27, 2019.)) The Part One Rule revokes California’s authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. On March 31, 2020, the USEPA finalized rulemaking for SAFE Part Two, which sets CO<sub>2</sub> emissions standards and corporate average fuel economy standards for passenger vehicles and light duty trucks, covering model years 2021 through 2026.

### **Bay Area Air Quality Management District**

The BAAQMD is the regional agency with jurisdiction over the nine-county region located in the Basin. The Association of Bay Area Governments (ABAG), Metropolitan Transportation Commission (MTC),



county transportation agencies, cities and counties, and various non-governmental organizations also join of regulations and policies, as well as implementation of extensive education and public outreach programs.

Under CEQA, the BAAQMD is a commenting responsible agency for air quality within its jurisdiction or impacting its jurisdiction. The BAAQMD reviews projects to ensure that they would: (1) support the primary goals of the latest Air Quality Plan; (2) include applicable control measures from the Air Quality Plan; and (3) not disrupt or hinder implementation of any Air Quality Plan control measures.

On April 20, 2022, the BAAQMD Board of Directors adopted the *CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans* (Guidance). In its Guidance, the District recommends thresholds for determining whether a proposed project will have a significant impact on climate change. Under the Guidance, the BAAQMD establishes that if a project would contribute its “fair share” of what will be required to achieve the long-term climate goals in California, then a reviewing agency can find that the impact will not be significant because the project will help to solve the problem of global climate change.

### **City of Milpitas Climate Action Plan**

The City of Milpitas developed a Climate Action Plan (CAP) to serve as a comprehensive roadmap to continue addressing the challenges of climate change. The objectives of the CAP are: (1) to reduce GHG emissions from local activities to achieve GHG reduction targets and (2) to build community resilience to prepare for and adapt to the impacts of climate change. The CAP establishes locally based strategies, measures, and actions that will serve to achieve these objectives and simultaneously enhance the quality of life for residents, workers, and visitors of the city. The CAP is consistent with and complementary to State climate legislation and regulatory mandates and aligns with the State’s and the region’s approach to addressing climate change at the local level in communities across California.

The CAP also identifies nine “co-benefits” that would result from the implementation of the CAP. These co-benefits are considered as additional valuable outcomes that are not the primary intent of climate change mitigation or adaptation actions, such as improvements to local air quality and water supply, increases in local green jobs and cost savings, and benefits to public health and improved mobility options. The CAP incorporates best practices to produce a blueprint for achieving GHG emissions reduction in Milpitas and ultimately, to comply with AB 32, SB 32, AB 1279 and SB 375.

The water supply and wastewater treatment sectors represent the city’s smallest emissions-generating sectors. Together, water and wastewater activities represented roughly one percent of community GHG emissions in 2019. State legislative actions (i.e., SB 100 [Renewables Portfolio Standard]) will eliminate water supply-related emissions in 2045, but wastewater treatment emissions will continue to grow over time. Although emissions from water supply will be eliminated and wastewater treatment will account for a minimal proportion of the city’s emissions in the future, implementing local actions focused on these

sectors will increase the pace of GHG emissions reductions while improving community resilience and energy reliability.<sup>23</sup>

The Milpitas Climate Action Plan includes the strategy for integrated resilience planning and improved biodiversity and habitat. This strategy is designed to prioritize nature-based solutions to improve resilience while promoting biodiversity by implementing the following action items (as related to this proposed project):

- Work with Valley Water to restrict future fencing, piping and channelization of creeks when flood control and public safety can be achieved through measures that preserve the natural environmental and habitat of riparian corridors; in addition, evaluate opportunities to revert some existing concrete-lined channels to more natural alternatives such as levees.
- Collaborate with Valley Water to support the priorities and projects of the Safe, Clean Water and Natural Flood Protection Program. Pursue grant funding opportunities from Valley Water to provide funding for water conservation, habitat restoration, and open space projects that increase community resiliency, while improving water quality and increasing flood safety throughout the community.
- Continue to collaborate with Valley Water and pursue grant funding from the district to support the priorities and projects of the Safe, Clean Water and Natural Flood Protection Program.
- Encourage and accommodate multipurpose flood control projects that incorporate recreation, education, resource conservation, preservation of natural riparian habitat, and the scenic value of drainages, creeks, and detention ponds.<sup>24</sup>

### **Santa Clara Valley Water Climate Change Action Plan**

In 2021, Santa Clara Valley Water published a Climate Change Action Plan (CCAP)<sup>25</sup> to guide Valley Water's climate change response through the development of goals and strategies that:

- reduce Valley Water's contribution to climate change by reducing GHG emissions (mitigation); and
- enable Valley Water to adapt to the potential impacts of climate change in each of Valley Water's mission areas.

The CCAP describes future climate impacts as well as agency-specific vulnerabilities and risks associated with climate change. The CCAP is intended as a plan that provides goals, establishes strategies, suggests possible actions, and proposes the development of an implementation program to achieve these goals and strategies. The program will instill climate resilience as a priority throughout Valley Water's many areas of work and will build and expand upon Valley Water's many existing climate-related efforts.<sup>26</sup>

---

<sup>23</sup> Milpitas Climate Action Plan, August 2022, <https://www.milpitas.gov/313/Climate-Action-Plan>

<sup>24</sup> Milpitas Climate Action Plan, August 2022, <https://www.milpitas.gov/313/Climate-Action-Plan>

<sup>25</sup> Santa Clara Valley Water, Climate Action Plan, July 2021, <https://www.valleywater.org/your-water/climate-change-action-plan>

<sup>26</sup> Santa Clara Valley Water Climate Action Plan, July 2021, <https://www.valleywater.org/your-water/water-supply-planning/climate-change-action-plan>

Goals, strategies, and possible actions were developed to guide Valley Water's climate change efforts. There are seven goals, three mitigation goals and four adaptation goals. The mitigation goals correspond to an internationally recognized system of carbon accounting that divides emissions into three scopes: direct emissions, purchased electricity, and indirect emissions. The adaptation goals correspond to Valley Water's three mission areas, with an additional goal to address emergency preparedness. Each goal contains strategies offering guidance on how to achieve the goal.

*Goal 1: Reduce Direct Greenhouse Gas Emissions (Scope 1)*

Scope 1 emissions (Direct Emissions) make up a small percentage of Valley Water's annual GHG emissions. In 2016, this category comprised about 13 percent of total recorded emissions. Valley Water plans to continue adding electric vehicles and other fuel-efficient vehicles to its fleet, along with implementing policies to promote EV use. These emissions have been reduced by providing more technology to support remote meetings, reducing the number of trips made, improving the availability of drop-in cubicles and pool vehicles, and by streamlining routes to minimize vehicle miles traveled. Valley Water plans to continue to replace various types of agency-owned equipment with more fuel efficient or electric models to reduce GHG emissions and updating diesel engines to comply with the Tier 4 diesel emissions mandate. Valley Water can further lower GHG emissions by improving the efficiency of heating and cooling equipment at agency facilities.

*Goal 2: Expand Renewable Energy and Improve Energy Efficiency (Scope 2)*

Scope 2 (purchased energy) emissions fluctuated by up to 6,000 metric tons of CO<sub>2</sub>e per year due to Valley Water's energy portfolio. Ninety-five percent of Valley Water's purchased electricity is sourced from the Power and Water Resources Pooling Agency (PWRPA), which enables Valley Water to source carbon-free electricity from utility-scale solar and hydroelectric projects. Emissions from PWRPA's electricity vary if environmental conditions change the availability of these forms of electricity. Purchased electricity makes up a small percentage of total GHG emissions.

Valley Water plans to continue to optimize energy use and reduce overall demand for purchased electricity. This can be achieved by improving the efficiency of office equipment and expanding energy and water saving measures through the Green Business Program's certification.

*Goal 3: Reduce Indirect Greenhouse Gas Emissions (Scope 3)*

GHG emissions (Scope 3) from importing water from the State Water Project consistently make up the largest percentage of Valley Water's GHG emissions. Other sources of imported water—the Central Valley Project and water distributed from the Hetch Hetchy system—use hydropower and therefore do not contribute to Valley Water's emissions. Emissions from imported water comprised about 75 percent of total GHG emissions. Other Scope 3 emissions from fuel use, employee commutes, and business travel remain relatively constant and make up a small portion of total emissions.

Policies that enable telework, alternative schedules, use of public transit, and other ways to reduce VMTs all contribute to reducing indirect GHG emissions. In addition, Valley Water's continuing to invest in EV charging stations and improve the convenience of their use further incentivize low emission commuting.

## Santa Clara Valley Water Greenhouse Gas Reduction Plan

Valley Water is preparing a Greenhouse Gas Reduction Plan (GHGRP) that is consistent with the framework outlined under CEQA Guidelines Section 15183.5. The GHGRP provides an inventory of Valley Water's GHG emissions through 2021, a forecast of future GHG emissions, and a list of measures to achieve a goal of net zero emissions by 2045. It provides specific measures to reduce GHG emissions and metrics to measure progress and will be considered for adoption in a public process following preparation of a CEQA document analyzing potential environmental impacts of the GHGRP. Consistency with the GHGRP can be used in the future, once it is adopted and the CEQA document certified, to streamline CEQA compliance for future Valley Water projects.<sup>27</sup>

## Greenhouse Gas Regional Emission Estimates

In 2022, the United States emitted about 6,343 million metric tons of CO<sub>2</sub>e or 5,489 million metric tons of CO<sub>2</sub>e after accounting for sequestration from the land sector. Emissions increased in 2022 by 1 percent. The increase in total GHG emissions was driven largely by an increase in CO<sub>2</sub> emissions from fossil fuel combustion. In 2022, CO<sub>2</sub> emissions from fossil fuel combustion increased by 1 percent compared to the previous year. This increase in fossil fuel consumption emissions was due in part to the continued rebound in economic activity after the height of the COVID-19 pandemic.<sup>28</sup>

According to USEPA, net emissions were 17 percent below 2005 levels. The recent decline is mostly due to a shift to less CO<sub>2</sub>-intensive natural gas for generating electricity and a rapid increase in the use of renewable energy in the electric power sector. Transportation activities accounted for 28 percent of total GHGs emissions in 2022. Emissions from electric power accounted for the second largest portion (25 percent), while emissions from industry accounted for the third largest portion (23 percent) of total GHG in 2022.<sup>29</sup>

In 2023, California emitted approximately 360 million metric tons of CO<sub>2</sub>e, 11 million metric tons of CO<sub>2</sub>e lower than 2022 levels and 60 million metric tons of CO<sub>2</sub>e below the 2020 GHG limit of 431 million metric tons of CO<sub>2</sub>e). The transportation sector represents 38 percent of the total GHG emissions. The industrial sector represents 22 percent of the total GHG emissions, followed by electricity (12 percent), and residential, agricultural, and commercial (10, 8, and 7 percent, respectively).<sup>30</sup>

In the San Francisco Bay Area, the GHG emissions inventory prepared by the BAAQMD indicates that the transportation and industrial/commercial sectors represent the largest sources of GHG emissions, accounting for 39.7 percent and 35.7 percent, respectively, of the Bay Area's 86.6 million tons of CO<sub>2</sub>e emissions in 2011. Electricity/co-generation sources account for approximately 14 percent of the Bay

---

<sup>27</sup> Santa Clara Valley Water, Greenhouse Gas Reduction Plan, November 2024, <https://www.valleywater.org/your-water/greenhouse-gas-reduction-plan>

<sup>28</sup> United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2022*, April 11, 2024, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

<sup>29</sup> United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2022*, April 11, 2024, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

<sup>30</sup> California Air Resources Board, *Emissions Trends Report 2000-2023 (2025 Edition)*, November 4, 2025, <https://ww2.arb.ca.gov/ghg-inventory-data>

Area's GHG emissions, followed by residential fuel usage at approximately 7.7 percent. Off-road equipment sources currently account for approximately 1.5 percent of total Bay Area GHG emissions.<sup>31</sup>

The latest inventory of greenhouse gas emissions in the City of Milpitas in 2019. The main sources that contribute to the City's emissions are from gasoline cars and natural gas-powered use in buildings. The Milpitas Climate Action Plan prioritizes actions to target and reduce the biggest emission sources. The 2019 baseline inventory estimated that community emissions were approximately 441,557 metric tons of CO<sub>2</sub>e. Emissions from on-road transportation, which include emissions from fossil fuel (i.e., gasoline and diesel) combustion in vehicles, accounted for approximately 59 percent of community emissions. The second-largest emissions sector, nonresidential building energy, contributed approximately 22 percent of community GHG emissions in 2019, and the residential building energy sector generated approximately 10 percent of the city's emissions. The solid waste and off-road vehicles and equipment sectors accounted for 5 percent and 4 percent, respectively, and wastewater treatment and water supply each contributed less than 1 percent of total emissions.<sup>32</sup>

The most recent final emissions inventory for Valley Water is presented in the Climate Action Plan, which summarizes GHG emissions and offsets from 2010 to 2017. In 2017, the total GHG emissions associated with Valley Water were 15,300 metric tons of CO<sub>2</sub>e. The GHG emissions sequestered or reduced were 19,235 metric tons of CO<sub>2</sub>e for a net reduction of 3,935 metric tons of CO<sub>2</sub>e.<sup>33</sup>

## Thresholds of Significance

CEQA Guidelines Appendix G includes a list of potentially significant project impacts. The project would have a GHG emissions impact if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHG.

CEQA Guidelines Section 15064.4 provides guidance to lead agencies for determining the significance of environmental impacts pertaining to GHG emissions. Section 15064.4(a) states that a lead agency should make a good-faith effort that is based, to the extent possible, on scientific and factual data to describe, calculate, or estimate the amount of GHG emissions that would result from implementation of a project. CEQA Guidelines Section 15064.4(b) also states that, when assessing the significance of impacts from GHG emissions, a lead agency should consider (1) the extent to which the project may increase or reduce GHG emissions compared with existing conditions, (2) whether the project's GHG emissions would exceed a threshold of significance that the lead agency has determined to be applicable to the project, and (3) the

---

<sup>31</sup> Bay Area Air Quality Management District, *Bay Area Emissions Inventory*, Adopted June 2011.

<sup>32</sup> Milpitas Climate Action Plan, August 2022, <https://www.milpitas.gov/313/Climate-Action-Plan>

<sup>33</sup> Santa Clara Valley Water Climate Action Plan, July 2021, <https://www.valleywater.org/your-water/water-supply-planning/climate-change-action-plan>

extent to which the project would comply with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Because the issue of global climate change is inherently a cumulative issue, the contribution of project GHG emissions to climate change is addressed as a cumulative impact. Some counties, cities, and air districts have developed guidance and thresholds for determining the significance of GHG emissions that occur within their jurisdiction. Valley Water is the CEQA lead agency for the project and is, therefore, responsible for determining whether GHG emissions with the project would have a cumulatively considerable contribution to climate change.

CEQA allows lead agencies to identify thresholds of significance applicable to a project that are supported by substantial evidence. Substantial evidence is defined in the CEQA statute to mean “facts, reasonable assumptions predicated on facts, and expert opinion supported by facts” (14 CCR 15384(b)).<sup>34</sup> Substantial evidence can be in the form of technical studies, agency staff reports or opinions, expert opinions supported by facts, and prior CEQA assessments and planning documents. Therefore, to establish additional context in which to consider the order of magnitude of the proposed project’s GHG emissions, this analysis accounts for the following considerations by other government agencies and associations about what levels of GHG emissions constitute a cumulatively considerable incremental contribution to climate change:

- Sacramento Metropolitan Air Quality Management District (SMAQMD) established thresholds, including 1,100 metric tons of CO<sub>2</sub>e per year for construction activities.<sup>35</sup>

As described, 1,100 metric tons of CO<sub>2</sub>e per year threshold for construction activities is used by several air districts in the State determining the significance of project-level GHG emissions. Therefore, the proposed project’s GHG emissions were compared to the 1,100 metric tons of CO<sub>2</sub>e per year for construction activities (i.e., offroad equipment and haul trucks). The substantial evidence for this GHG emissions threshold is based on the expert opinion of various California air districts, which have applied the 1,100 metric tons of CO<sub>2</sub>e per year in numerous CEQA documents where those air districts were the lead agency.

## **Project Greenhouse Gas Emissions**

The BAAQMD CEQA Guidelines do not identify a GHG emissions threshold for construction-related emissions; however, they do recommend that GHG emissions from construction be quantified and

---

<sup>34</sup> 14 CCR 15384 provides the following discussion: "Substantial evidence" as used in the Guidelines is the same as the standard of review used by courts in reviewing agency decisions. Some cases suggest that a higher standard, the so called "fair argument standard" applies when a court is reviewing an agency's decision whether or not to prepare an EIR. Public Resources Code section 21082.2 was amended in 1993 (Chapter 1131) to provide that substantial evidence shall include "facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." The statute further provides that "argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly inaccurate or erroneous, or evidence of social or economic impacts which do not contribute to, or are not caused by, physical impacts on the environment, is not substantial evidence."

<sup>35</sup> Sacramento Metropolitan Air Quality Management District, Guide to Air Quality Assessment in Sacramento County, May 2018, <http://www.airquality.org/Residents/CEQA-Land-Use-Planning/CEQA-Guidance-Tools>

disclosed and a determination regarding the significance of the GHG emissions be made with respect to whether the project in question is consistent with state goals regarding reductions in GHG emissions. GHG emissions due to construction activities were quantified using CalEEMod.

As noted in BAAQMD's *CEQA Air Quality Guidelines, Appendix B*, GHG emissions from construction represent a very small portion of a project's lifetime GHG emissions and operational emissions represent the vast majority of project GHG emissions. Construction emissions are a one-time release and would not result in a significant impact on the environment. Construction would utilize fuel efficient equipment and trucks consistent with state regulations and would be consistent with state regulations intended to reduce the inefficient, wasteful, or unnecessary consumption of energy, such as anti-idling and emissions regulations. Therefore, project construction would result in a less-than-significant impact.

The estimated construction GHG emissions are 1,588 (unmitigated) and 1,422 (mitigated) metric tons of CO<sub>2</sub>e. As indicated, 25-year (expected project lifetime) amortized annual construction related GHG emissions would be approximately 64 (unmitigated) and 57 (mitigated) metric tons of CO<sub>2</sub>e, which is below the significance threshold of 1,100 metric tons of CO<sub>2</sub>e per year.<sup>36</sup> **Table 6: Estimated Construction Greenhouse Gas Emissions** shows the estimated project GHG emissions.

**Table 6: Estimated Construction Greenhouse Gas Emissions (metric tons)**

| Project                  | CO <sub>2</sub> e |
|--------------------------|-------------------|
| <b>Total Unmitigated</b> | <b>1,588</b>      |
| <b>25-Year Amortized</b> | <b>64</b>         |
| Significance Threshold   | 1,100             |
| Significant (Yes or No)? | No                |
| <b>Total Mitigated</b>   | <b>1,422</b>      |
| <b>25-Year Amortized</b> | <b>57</b>         |
| Significance Threshold   | 1,100             |
| Significant (Yes or No)? | No                |

SOURCE: CARB CalEEMod

BAAQMD recommends that projects incorporate best management practices in order to minimize GHG emissions for projects using construction equipment (based on *BAAQMD CEQA Air Quality Guidelines*, Table 6-1). Therefore, the proposed project would implement **Mitigation Measure GHG-1**. Secondly, as part of the Water Stream Maintenance Program Update, the project would implement **Mitigation Measure GHG-2**.

---

<sup>36</sup> Given that the BAAQMD does not have a policy, construction emissions were amortized over 30 years consistent with SCAQMD's Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, December 5, 2008, [https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgboardsynopsis.pdf](https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf)

### **Mitigation Measure GHG-1: GHG Emissions Reduction Practices for Valley Water Maintenance Activities**

Consistent with the Valley Water Stream Maintenance Program Update,<sup>37</sup> Valley Water shall require the contractor to implement mobile source and other GHG emission reduction measures. All requirements shall be included in applicable bid documents, purchase orders, and constructs, with the contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and maintenance activities. The measures to include are as follows:

- Use zero-emission and hybrid-powered equipment to the greatest extent possible, provided adequate electricity supply and infrastructure is available in the planned work area. The performance criteria for meeting this standard are that at least two commercial rental facilities in the San Francisco Bay Area Air Basin are available, and that electricity and charging infrastructure be located near the planned work area.
- Require that all on-road heavy-duty trucks to meet the most stringent emissions standard as a condition of contract; this currently means that trucks need to be a 2015 model year (or newer).
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than two minutes. Provide clear signage that posts this requirement for workers at the entrances to the site.
- Use CARB-approved renewable diesel fuel R99 or R100 in off-road construction equipment and on-road trucks.
- Use USEPA SmartWay certified trucks for deliveries and equipment transport.
- Require that all construction equipment be maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a certified mechanic in accordance with the manufacturer's specifications and determined to be running in proper condition prior to operation.
- Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking to construction workers, and offer meal options on site or shuttles to nearby meal destinations for construction employees.
- Recycle or salvage nonhazardous construction and demolition debris.
- Develop a plan to efficiently use water for adequate dust control because substantial amounts of energy can be consumed during the pumping of water.

---

<sup>37</sup> Santa Clara Valley Water, Stream Maintenance Program Update Draft Subsequent Environmental Impact Report, July 2025, <https://www.valleywater.org/project-updates/stream-maintenance-program>



## **Mitigation Measure GHG-2: GHG Emissions Mitigation Program**

Notably, as part of the Water Stream Maintenance Program Update,<sup>38</sup> Valley Water will purchase GHG emissions credits annually to offset GHG emissions increases from the Water Stream Maintenance Program Renewal.

Valley Water will prioritize purchase of offsets that are not “otherwise required” (CEQA Guidelines Section 15126.4(c)(3)) using the following preference hierarchy: within the San Francisco Bay Area Air Basin, originating within California, and originating in other states with offset laws at least as strict as California’s. However, all offset credits shall meet the following validation criteria as defined by 17 CCR 95802: the offset credits must be real, permanent, quantifiable, verifiable, enforceable, and additional. Offset protocols must also be consistent with CARB requirements under 17 CCR 95972. Offset credits shall be registered with a recognized and reputable carbon registry (e.g., Climate Action Reserve, the American Carbon Registry, or Verra).

Valley Water will maintain documentation of any GHG offsets, ensuring that the offsets are real, permanent, quantifiable verifiable, enforceable, and additional. If in the future Valley Water approves a qualified GHGRP consistent with CEQA Guidelines Section 15183.5(b) and the Program Renewal is demonstrated to be consistent with the GHGRP, then the annual requirements for offsets may be replaced by implementing applicable measures in the GHGRP.

## **Consistency with State and Local GHG Reduction Plans**

In 2021, Santa Clara Valley Water published a CCAP.<sup>39</sup> The CCAP is a district-wide plan to reduce GHG emissions that is not applicable to individual projects. State plans for reducing GHG emissions include CARB’s 2017 Scoping Plan for achieving the 2030 GHG emissions reduction target outlined in SB 32 (40 percent below 1990 levels by 2030) and CARB’s 2022 Scoping Plan for achieving carbon neutrality by 2045 and 85 percent below 1990 levels. CARB’s scoping plans rely on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies, such as SB 100, which requires electricity providers to increase procurement from eligible renewable energy resources to 60 percent by 2030 and 100 percent by 2045.

The Valley Water CCAP provides goals, strategies, and possible actions to reduce its GHG emissions and address the ways that Valley Water is vulnerable to climate change impacts in each of Valley Water’s mission areas, including water supply, flood protection, and ecosystem stewardship. The CCAP sets seven goals to guide Valley Water’s response to climate change. project construction consistency with the CCAP is demonstrated, based on the following items, where project construction would be consistent with and not conflict with the Valley Water CCAP, and there would be a less-than-significant impact related to GHG emissions generation conflicting with the Valley Water CCAP:

---

<sup>38</sup> Santa Clara Valley Water, Stream Maintenance Program Update Draft Subsequent Environmental Impact Report, July 2025, <https://www.valleywater.org/project-updates/stream-maintenance-program>

<sup>39</sup> Santa Clara Valley Water, Climate Action Plan, July 2021, <https://www.valleywater.org/your-water/climate-change-action-plan>

- Construction equipment and fleets would reduce emissions through the use of engine electrification (including hybrid equipment), the use of renewable fuels where possible, and reduced idling time/equipment operation time. These actions would reduce GHG emissions from project construction equipment fleet.
- Project construction would utilize construction haul routes that are optimized to minimize GHG emissions.

CARB's 2022 Scoping Plan extends and expands upon earlier scoping plans with a target of reducing anthropogenic GHG emissions to 85 percent below 1990 levels by 2045. The 2022 Scoping Plan's strategies that are applicable to the project include reducing fossil fuel use, energy demand, and VMT. The actions and outcomes in the Scoping Plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Scoping Plan is implemented at the State level, and compliance at a specific plan or project level is not addressed in the Plan. The project would use vehicles and equipment that would meet current standards at the time of construction and would not conflict with the statewide programs designed to address GHG emissions reduction goals. The project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions and would have a less than significant impact on GHG emissions. As shown previously, the project's construction GHG emissions are less than significant.

The project would ensure that GHG emissions during construction activities would be minimized through implementation of best management practices. With the implementation of **Mitigation Measure GHG-1, Mitigation Measure GHG-2, Best Management Practice AQ-1, Mitigation Measure AQ-1, Best Management Practice AQ-2, and Best Management Practice AQ-2** project construction activities would utilize fuel efficient equipment and trucks consistent with state regulations and would be consistent with state regulations intended to reduce the inefficient, wasteful, or unnecessary consumption of energy, such as anti-idling and emissions regulations. Project construction activities would be consistent with SB 32, AB 1279, the 2022 Scoping Plan, the Valley Water CCAP, and City of Milpitas Climate Action Plan with implementation of **Mitigation Measure GHG-1, Mitigation Measure GHG-2, Best Management Practice AQ-1, Mitigation Measure AQ-1, Best Management Practice AQ-2, and Best Management Practice AQ-2**. Project construction activities would not conflict with these GHG reduction policies and plans without mitigation. Therefore, the project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions, and overall impacts would be less than significant.

The proposed project is consistent with applicable CCAP strategies as described within the following information:

Reduce GHG emissions Associated with the Valley Water fleet.

Consistent. Maintenance equipment and fleets would reduce emissions through the use of engine electrification (including hybrid equipment), the use of renewable fuels where possible, and

reduced idling time/equipment operation time. These actions would reduce GHG emissions from project construction equipment fleet.

Reduce GHG emissions from trips between Valley Water offices and work sites.

Consistent. Program Renewal activities would utilize maintenance routes that minimize GHG emissions.

Reduce GHG emissions associated with valley Water-owned equipment.

Consistent. Valley Water already uses electric, hybrid, and alternatively fueled equipment for Program activities and will continue to expand these under **Mitigation Measure GHG-1**.

Minimize GHG emissions associated with planning, design, construction, operation, and maintenance of capital projects.

Consistent. Maintenance equipment and fleets would reduce emissions through the use of engine electrification (including hybrid equipment), the use of renewable fuels where possible, and reduced idling time/equipment operation time. These actions would reduce GHG emissions from the Program Renewal maintenance equipment fleet.

Create and expand other efforts to minimize indirect GHG emissions.

Consistent. Valley Water's commitment to renewable energy sources minimizes indirect GHG emissions.

## **11.0 SUMMARY**

In summary, daily and annual construction activities emissions would not exceed the significance thresholds, as described in **Section 5**. Project construction emissions would be less than significant with mitigation (**Section 6**). Health Impacts (**Section 7**), odor impacts (**Section 8**), and cumulative impacts (**Section 9**) would be less than significant. GHG emissions would be less than significant with mitigation (**Section 10**). Therefore, the project would have a less than significant impact on air quality and GHG emissions.

**Attachment A**

**Construction Emissions**

**CalEEMod Input Summary**

**CalEEMod Output Files**

## Valley Water Tularcitos Creek Milpitas

### CalEEMod Version 2022.1 Inputs

#### Project Characteristics

Start of Construction: June 15, 2027

End of Construction: October 15, 2027

Location: Santa Clara County

Air District: Bay Area Air Quality Management District

Land Use Setting: Suburban

#### Project Specifics

Valley Water is currently proposing the Tularcitos Creek Downstream North Hillview Drive Levee Repair. The proposed project is approximately 2,815 linear feet (by eight feet wide with a depth of three feet) of a non-accredited levee have eroded due to damage from rodent activity along the west bank of Tularcitos Creek in the City of Milpitas. The project involves dewatering, installation and removal of a temporary access ramp, and bank stabilization along Tularcitos Creek between North Hillview Drive and Paseo Refugio in the City of Milpitas. The Project area is approximately 2.7 acres. Work would only occur Monday through Friday between 7 a.m. and 7 p.m. Project generators (one primary and one backup) would operate 24 hours per day, seven days per week during the construction activities. Project would be completed in approximately 120 business days.

#### **Estimated Construction Schedule**

| Construction Activity  | Start      | End        | Working Days |
|------------------------|------------|------------|--------------|
| Temporary Access       | 06/15/2027 | 06/18/2027 | 4            |
| Grading and Excavation | 06/21/2027 | 10/01/2027 | 75           |
| Bank Stabilization     | 06/21/2027 | 10/01/2027 | 75           |
| Finished Grading       | 10/04/2027 | 10/15/2027 | 10           |

#### **Estimated Construction Equipment Usage**

| Construction Activity | Equipment           | Amount | Daily Hours | HP  |
|-----------------------|---------------------|--------|-------------|-----|
| Temporary Access      | Excavator           | 1      | 8           | 38  |
| Temporary Access      | Loader              | 1      | 8           | 84  |
| Temporary Access      | Sheepsfoot          | 1      | 8           | 36  |
| Temporary Access      | Skid Steer          | 1      | 8           | 71  |
| Temporary Access      | Dump Trucks         | 2      | 8           | 376 |
| Temporary Access      | Water Truck/Sweeper | 2      | 8           | 376 |
| Temporary Access      | Generators          | 2      | 24          | 50  |

|                        |                     |    |    |     |
|------------------------|---------------------|----|----|-----|
| Grading and Excavation | Excavator           | 2  | 8  | 38  |
| Grading and Excavation | Loader              | 1  | 8  | 84  |
| Grading and Excavation | Sheepsfoot          | 1  | 8  | 36  |
| Grading and Excavation | Skid Steer          | 1  | 8  | 71  |
| Grading and Excavation | Dump Trucks         | 10 | 8  | 376 |
| Grading and Excavation | Water Truck/Sweeper | 2  | 8  | 376 |
| Grading and Excavation | Generators          | 2  | 24 | 50  |
| Bank Stabilization     | Excavator           | 2  | 8  | 38  |
| Bank Stabilization     | Loader              | 1  | 8  | 84  |
| Bank Stabilization     | Sheepsfoot          | 1  | 8  | 36  |
| Bank Stabilization     | Skid Steer          | 1  | 8  | 71  |
| Bank Stabilization     | Dump Trucks         | 10 | 8  | 376 |
| Bank Stabilization     | Water Truck/Sweeper | 2  | 8  | 376 |
| Bank Stabilization     | Generators          | 2  | 24 | 50  |
| Finished Grading       | Excavator           | 2  | 8  | 38  |
| Finished Grading       | Loader              | 1  | 8  | 84  |
| Finished Grading       | Sheepsfoot          | 1  | 8  | 36  |
| Finished Grading       | Skid Steer          | 1  | 8  | 71  |
| Finished Grading       | Dump Trucks         | 10 | 8  | 376 |
| Finished Grading       | Water Truck/Sweeper | 2  | 8  | 376 |
| Finished Grading       | Generators          | 2  | 24 | 50  |

Note: Additionally, five construction worker vehicle trips and the use of two pickup trucks onsite will occur during each construction phase. This equipment list provided is an estimate based on current project planning and requirements. Actual equipment usage may vary depending on on-site conditions, project needs, and any adjustments to the project schedule.

# Valley Water Tularcitos Creek Milpitas Custom Report

## Table of Contents

- 1. Basic Project Information
  - 1.1. Basic Project Information
  - 1.2. Land Use Types
  - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
  - 2.1. Construction Emissions Compared Against Thresholds
  - 2.2. Construction Emissions by Year, Unmitigated
  - 2.3. Construction Emissions by Year, Mitigated
- 3. Construction Emissions Details
  - 3.1. Temporary Access (2027) - Unmitigated
  - 3.2. Temporary Access (2027) - Mitigated
  - 3.3. Grading and Excavation (2027) - Unmitigated
  - 3.4. Grading and Excavation (2027) - Mitigated
  - 3.5. Bank Stabilization (2027) - Unmitigated
  - 3.6. Bank Stabilization (2027) - Mitigated

3.7. Finished Grading (2027) - Unmitigated

3.8. Finished Grading (2027) - Mitigated

#### 4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

#### 5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated



## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

## 5.5. Architectural Coatings

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

### 5.6.2. Construction Earthmoving Control Strategies

## 5.7. Construction Paving

## 5.8. Construction Electricity Consumption and Emissions Factors

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

#### 5.18.1.2. Mitigated

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

#### 5.18.1.2. Mitigated

### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

#### 5.18.2.2. Mitigated

## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

### 6.2. Initial Climate Risk Scores

### 6.3. Adjusted Climate Risk Scores

## 7. Health and Equity Details

### 7.1. CalEnviroScreen 4.0 Scores

### 7.2. Healthy Places Index Scores

### 7.3. Overall Health & Equity Scores

### 7.4. Health & Equity Measures

### 7.5. Evaluation Scorecard

### 7.6. Health & Equity Custom Measures

## 8. User Changes to Default Data

### 8.1. Justifications

### 8.4. Construction

#### 8.4.4. Dust from Material Movement

#### 8.4.6. Trips and VMT

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field                  | Value                                  |
|-----------------------------|----------------------------------------|
| Project Name                | Valley Water Tularcitos Creek Milpitas |
| Construction Start Date     | 6/2/2027                               |
| Lead Agency                 | Santa Clara Valley Water               |
| Land Use Scale              | Project/site                           |
| Analysis Level for Defaults | County                                 |
| Windspeed (m/s)             | 3.00000                                |
| Precipitation (days)        | 31.0000                                |
| Location                    | 37.44149768295901, -121.89484082880834 |
| County                      | Santa Clara                            |
| City                        | Milpitas                               |
| Air District                | Bay Area AQMD                          |
| Air Basin                   | San Francisco Bay Area                 |
| TAZ                         | 1994                                   |
| EDFZ                        | 1                                      |
| Electric Utility            | Pacific Gas & Electric Company         |
| Gas Utility                 | Pacific Gas & Electric                 |
| App Version                 | 2022.1.1.37                            |

## 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 |
|---------------------|---------|------|-------------|-----------------------|------------------------|--------------------------------|------------|-------------|
| User Defined Linear | 0.53000 | Mile | 2.70000     | 0.00000               | 0.00000                | —                              | —          | —           |

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

| Sector       | #    | Measure Title                          |
|--------------|------|----------------------------------------|
| Construction | C-2* | Limit Heavy-Duty Diesel Vehicle Idling |
| Construction | C-5  | Use Advanced Engine Tiers              |

\* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

## 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.              | 16.4406 | 13.5616 | 90.8916 | 116.395 | 0.40601 | 2.66930 | 1.07637 | 3.74567 | 2.45952 | 0.29031 | 2.74984 | —    | 43,227.6 | 43,227.6 | 1.89249 | 0.89696 | 7.44968 | 43,549.6 |
| Mit.                | 4.49168 | 4.21843 | 49.1125 | 207.940 | 0.34848 | 0.78662 | 1.07637 | 1.86299 | 0.78662 | 0.29031 | 1.07693 | —    | 38,777.1 | 38,777.1 | 1.71196 | 0.86086 | 7.44968 | 39,083.9 |
| % Reduced           | 73%     | 69%     | 46%     | -79%    | 14%     | 71%     | —       | 50%     | 68%     | —       | 61%     | —    | 10%      | 10%      | 10%     | 4%      | —       | 10%      |
| Daily, Winter (Max) | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |
| Unmit.              | 16.4350 | 13.5570 | 91.1414 | 116.362 | 0.40601 | 2.66930 | 1.07637 | 3.74567 | 2.45952 | 0.29031 | 2.74984 | —    | 43,223.1 | 43,223.1 | 1.89275 | 0.89714 | 0.19371 | 43,538.0 |
| Mit.                | 4.48603 | 4.21389 | 49.3623 | 207.907 | 0.34848 | 0.78662 | 1.07637 | 1.86299 | 0.78662 | 0.29031 | 1.07693 | —    | 38,772.6 | 38,772.6 | 1.71222 | 0.86103 | 0.19371 | 39,072.2 |
| % Reduced           | 73%     | 69%     | 46%     | -79%    | 14%     | 71%     | —       | 50%     | 68%     | —       | 61%     | —    | 10%      | 10%      | 10%     | 4%      | —       | 10%      |
| Average Daily (Max) | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |
| Unmit.              | 3.63900 | 3.00493 | 20.1517 | 25.8284 | 0.08968 | 0.59112 | 0.22037 | 0.81149 | 0.54461 | 0.05946 | 0.60407 | —    | 9,526.40 | 9,526.40 | 0.41511 | 0.19019 | 0.66848 | 9,594.13 |
| Mit.                | 0.99065 | 0.93443 | 10.9227 | 46.0810 | 0.07675 | 0.17364 | 0.22037 | 0.39401 | 0.17364 | 0.05946 | 0.23310 | —    | 8,526.56 | 8,526.56 | 0.37455 | 0.18208 | 0.66848 | 8,590.85 |

|              |         |         |         |         |         |         |         |         |         |         |         |   |          |          |         |         |         |          |
|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|----------|----------|---------|---------|---------|----------|
| % Reduced    | 73%     | 69%     | 46%     | -78%    | 14%     | 71%     | —       | 51%     | 68%     | —       | 61%     | — | 10%      | 10%      | 10%     | 4%      | —       | 10%      |
| Annual (Max) | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Unmit.       | 0.66412 | 0.54840 | 3.67769 | 4.71368 | 0.01637 | 0.10788 | 0.04022 | 0.14810 | 0.09939 | 0.01085 | 0.11024 | — | 1,577.20 | 1,577.20 | 0.06873 | 0.03149 | 0.11067 | 1,588.42 |
| Mit.         | 0.18079 | 0.17053 | 1.99340 | 8.40978 | 0.01401 | 0.03169 | 0.04022 | 0.07191 | 0.03169 | 0.01085 | 0.04254 | — | 1,411.67 | 1,411.67 | 0.06201 | 0.03015 | 0.11067 | 1,422.31 |
| % Reduced    | 73%     | 69%     | 46%     | -78%    | 14%     | 71%     | —       | 51%     | 68%     | —       | 61%     | — | 10%      | 10%      | 10%     | 4%      | —       | 10%      |

## 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                 | 16.4406 | 13.5616 | 90.8916 | 116.395 | 0.40601 | 2.66930 | 1.07637 | 3.74567 | 2.45952 | 0.29031 | 2.74984 | —    | 43,227.6 | 43,227.6 | 1.89249 | 0.89696 | 7.44968 | 43,549.6 |
| Daily - Winter (Max) | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |
| 2027                 | 16.4350 | 13.5570 | 91.1414 | 116.362 | 0.40601 | 2.66930 | 1.07637 | 3.74567 | 2.45952 | 0.29031 | 2.74984 | —    | 43,223.1 | 43,223.1 | 1.89275 | 0.89714 | 0.19371 | 43,538.0 |
| Average Daily        | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |
| 2027                 | 3.63900 | 3.00493 | 20.1517 | 25.8284 | 0.08968 | 0.59112 | 0.22037 | 0.81149 | 0.54461 | 0.05946 | 0.60407 | —    | 9,526.40 | 9,526.40 | 0.41511 | 0.19019 | 0.66848 | 9,594.13 |
| Annual               | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |
| 2027                 | 0.66412 | 0.54840 | 3.67769 | 4.71368 | 0.01637 | 0.10788 | 0.04022 | 0.14810 | 0.09939 | 0.01085 | 0.11024 | —    | 1,577.20 | 1,577.20 | 0.06873 | 0.03149 | 0.11067 | 1,588.42 |

## 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                 | 4.49168 | 4.21843 | 49.1125 | 207.940 | 0.34848 | 0.78662 | 1.07637 | 1.86299 | 0.78662 | 0.29031 | 1.07693 | — | 38,777.1 | 38,777.1 | 1.71196 | 0.86086 | 7.44968 | 39,083.9 |
| Daily - Winter (Max) | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| 2027                 | 4.48603 | 4.21389 | 49.3623 | 207.907 | 0.34848 | 0.78662 | 1.07637 | 1.86299 | 0.78662 | 0.29031 | 1.07693 | — | 38,772.6 | 38,772.6 | 1.71222 | 0.86103 | 0.19371 | 39,072.2 |
| Average Daily        | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| 2027                 | 0.99065 | 0.93443 | 10.9227 | 46.0810 | 0.07675 | 0.17364 | 0.22037 | 0.39401 | 0.17364 | 0.05946 | 0.23310 | — | 8,526.56 | 8,526.56 | 0.37455 | 0.18208 | 0.66848 | 8,590.85 |
| Annual               | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| 2027                 | 0.18079 | 0.17053 | 1.99340 | 8.40978 | 0.01401 | 0.03169 | 0.04022 | 0.07191 | 0.03169 | 0.01085 | 0.04254 | — | 1,411.67 | 1,411.67 | 0.06201 | 0.03015 | 0.11067 | 1,422.31 |

### 3. Construction Emissions Details

#### 3.1. Temporary Access (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          | 3.71140 | 3.09806 | 23.1021 | 32.2898 | 0.09107 | 0.60750 | —       | 0.60750 | 0.55890 | —       | 0.55890 | —    | 8,969.28 | 8,969.28 | 0.36383 | 0.07277 | —       | 9,000.06 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | —    | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | —    | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |

|                             |         |         |         |         |         |         |         |         |         |         |         |   |         |         |         |         |         |         |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|---------|---------|---------|---------|---------|---------|
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Average Daily               | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Off-Road Equipment          | 0.04067 | 0.03395 | 0.25317 | 0.35386 | 0.00100 | 0.00666 | —       | 0.00666 | 0.00612 | —       | 0.00612 | — | 98.2934 | 98.2934 | 0.00399 | 0.00080 | —       | 98.6307 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | — | —       | —       | —       | —       | —       | —       |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual                      | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Off-Road Equipment          | 0.00742 | 0.00620 | 0.04620 | 0.06458 | 0.00018 | 0.00122 | —       | 0.00122 | 0.00112 | —       | 0.00112 | — | 16.2736 | 16.2736 | 0.00066 | 0.00013 | —       | 16.3294 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | — | —       | —       | —       | —       | —       | —       |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite                     | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Daily, Summer (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Worker                      | 0.01548 | 0.01386 | 0.01049 | 0.17830 | 0.00000 | 0.00000 | 0.04133 | 0.04133 | 0.00000 | 0.00969 | 0.00969 | — | 41.2722 | 41.2722 | 0.00066 | 0.00162 | 0.13851 | 41.9101 |
| Vendor                      | 0.00928 | 0.00325 | 0.12577 | 0.06206 | 0.00074 | 0.00148 | 0.02818 | 0.02967 | 0.00148 | 0.00779 | 0.00927 | — | 103.884 | 103.884 | 0.00594 | 0.01543 | 0.22880 | 108.860 |
| Hauling                     | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |

|               |         |         |         |         |            |            |         |         |            |         |         |   |         |         |            |            |         |         |
|---------------|---------|---------|---------|---------|------------|------------|---------|---------|------------|---------|---------|---|---------|---------|------------|------------|---------|---------|
| Average Daily | —       | —       | —       | —       | —          | —          | —       | —       | —          | —       | —       | — | —       | —       | —          | —          | —       | —       |
| Worker        | 0.00016 | 0.00014 | 0.00013 | 0.00165 | 0.00000    | 0.00000    | 0.00044 | 0.00044 | 0.00000    | 0.00010 | 0.00010 | — | 0.42363 | 0.42363 | 0.00001    | 0.00002    | 0.00065 | 0.42979 |
| Vendor        | 0.00010 | 0.00003 | 0.00142 | 0.00069 | 0.00001    | 0.00002    | 0.00030 | 0.00032 | 0.00002    | 0.00008 | 0.00010 | — | 1.13878 | 1.13878 | 0.00007    | 0.00017    | 0.00108 | 1.19218 |
| Hauling       | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000    | 0.00000    | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000    | 0.00000    | 0.00000 | 0.00000 |
| Annual        | —       | —       | —       | —       | —          | —          | —       | —       | —          | —       | —       | — | —       | —       | —          | —          | —       | —       |
| Worker        | 0.00003 | 0.00003 | 0.00002 | 0.00030 | 0.00000    | 0.00000    | 0.00008 | 0.00008 | 0.00000    | 0.00002 | 0.00002 | — | 0.07014 | 0.07014 | < 0.000005 | < 0.000005 | 0.00011 | 0.07116 |
| Vendor        | 0.00002 | 0.00001 | 0.00026 | 0.00013 | < 0.000005 | < 0.000005 | 0.00006 | 0.00006 | < 0.000005 | 0.00002 | 0.00002 | — | 0.18854 | 0.18854 | 0.00001    | 0.00003    | 0.00018 | 0.19738 |
| Hauling       | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000    | 0.00000    | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000    | 0.00000    | 0.00000 | 0.00000 |

### 3.2. Temporary Access (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 Equipment          | 1.02775 | 1.02775 | 16.5404 | 49.4376 | 0.06231 | 0.16615 | —       | 0.16615 | 0.16615 | —       | 0.16615 | —    | 6,744.02 | 6,744.02 | 0.27357 | 0.05471 | —       | 6,767.16 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | —    | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | —    | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |
| Average Daily               | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |



|                             |         |         |         |         |         |         |         |         |         |         |         |   |         |         |         |         |         |         |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|---------|---------|---------|---------|---------|---------|
| Off-Road Equipment          | 0.01126 | 0.01126 | 0.18127 | 0.54178 | 0.00068 | 0.00182 | —       | 0.00182 | 0.00182 | —       | 0.00182 | — | 73.9071 | 73.9071 | 0.00300 | 0.00060 | —       | 74.1607 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | — | —       | —       | —       | —       | —       | —       |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual                      | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Off-Road Equipment          | 0.00206 | 0.00206 | 0.03308 | 0.09888 | 0.00012 | 0.00033 | —       | 0.00033 | 0.00033 | —       | 0.00033 | — | 12.2362 | 12.2362 | 0.00050 | 0.00010 | —       | 12.2781 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | — | —       | —       | —       | —       | —       | —       |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite                     | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Daily, Summer (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Worker                      | 0.01548 | 0.01386 | 0.01049 | 0.17830 | 0.00000 | 0.00000 | 0.04133 | 0.04133 | 0.00000 | 0.00969 | 0.00969 | — | 41.2722 | 41.2722 | 0.00066 | 0.00162 | 0.13851 | 41.9101 |
| Vendor                      | 0.00928 | 0.00325 | 0.12577 | 0.06206 | 0.00074 | 0.00148 | 0.02818 | 0.02967 | 0.00148 | 0.00779 | 0.00927 | — | 103.884 | 103.884 | 0.00594 | 0.01543 | 0.22880 | 108.860 |
| Hauling                     | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Average Daily               | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Worker                      | 0.00016 | 0.00014 | 0.00013 | 0.00165 | 0.00000 | 0.00000 | 0.00044 | 0.00044 | 0.00000 | 0.00010 | 0.00010 | — | 0.42363 | 0.42363 | 0.00001 | 0.00002 | 0.00065 | 0.42979 |
| Vendor                      | 0.00010 | 0.00003 | 0.00142 | 0.00069 | 0.00001 | 0.00002 | 0.00030 | 0.00032 | 0.00002 | 0.00008 | 0.00010 | — | 1.13878 | 1.13878 | 0.00007 | 0.00017 | 0.00108 | 1.19218 |
| Hauling                     | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual                      | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |

|         |         |         |         |         |            |            |         |         |            |         |         |   |         |         |            |            |         |         |
|---------|---------|---------|---------|---------|------------|------------|---------|---------|------------|---------|---------|---|---------|---------|------------|------------|---------|---------|
| Worker  | 0.00003 | 0.00003 | 0.00002 | 0.00030 | 0.00000    | 0.00000    | 0.00008 | 0.00008 | 0.00000    | 0.00002 | 0.00002 | — | 0.07014 | 0.07014 | < 0.000005 | < 0.000005 | 0.00011 | 0.07116 |
| Vendor  | 0.00002 | 0.00001 | 0.00026 | 0.00013 | < 0.000005 | < 0.000005 | 0.00006 | 0.00006 | < 0.000005 | 0.00002 | 0.00002 | — | 0.18854 | 0.18854 | 0.00001    | 0.00003    | 0.00018 | 0.19738 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000    | 0.00000    | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000    | 0.00000    | 0.00000 | 0.00000 |

### 3.3. Grading and Excavation (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          | 8.02854 | 6.72566 | 43.2322 | 56.9164 | 0.19069 | 1.31112 | —       | 1.31112 | 1.20623 | —       | 1.20623 | —    | 19,753.8 | 19,753.8 | 0.80130 | 0.16026 | —       | 19,821.6 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.01034 | 0.01034 | —       | 0.00157 | 0.00157 | —    | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | —    | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment          | 8.02854 | 6.72566 | 43.2322 | 56.9164 | 0.19069 | 1.31112 | —       | 1.31112 | 1.20623 | —       | 1.20623 | —    | 19,753.8 | 19,753.8 | 0.80130 | 0.16026 | —       | 19,821.6 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.01034 | 0.01034 | —       | 0.00157 | 0.00157 | —    | —        | —        | —       | —       | —       | —        |

|                             |         |         |         |         |         |         |         |         |         |         |         |   |          |          |         |         |         |          |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|----------|----------|---------|---------|---------|----------|
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Average Daily               | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment          | 1.64970 | 1.38198 | 8.88333 | 11.6951 | 0.03918 | 0.26941 | —       | 0.26941 | 0.24786 | —       | 0.24786 | — | 4,058.99 | 4,058.99 | 0.16465 | 0.03293 | —       | 4,072.92 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00212 | 0.00212 | —       | 0.00032 | 0.00032 | — | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Annual                      | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment          | 0.30107 | 0.25221 | 1.62121 | 2.13436 | 0.00715 | 0.04917 | —       | 0.04917 | 0.04523 | —       | 0.04523 | — | 672.013  | 672.013  | 0.02726 | 0.00545 | —       | 674.319  |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00039 | 0.00039 | —       | 0.00006 | 0.00006 | — | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Offsite                     | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Daily, Summer (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Worker                      | 0.01548 | 0.01386 | 0.01049 | 0.17830 | 0.00000 | 0.00000 | 0.04133 | 0.04133 | 0.00000 | 0.00969 | 0.00969 | — | 41.2722  | 41.2722  | 0.00066 | 0.00162 | 0.13851 | 41.9101  |
| Vendor                      | 0.00928 | 0.00325 | 0.12577 | 0.06206 | 0.00074 | 0.00148 | 0.02818 | 0.02967 | 0.00148 | 0.00779 | 0.00927 | — | 103.884  | 103.884  | 0.00594 | 0.01543 | 0.22880 | 108.860  |
| Hauling                     | 0.33400 | 0.07606 | 4.15461 | 2.08116 | 0.02315 | 0.04409 | 0.92700 | 0.97109 | 0.04409 | 0.25380 | 0.29789 | — | 3,429.74 | 3,429.74 | 0.27668 | 0.54234 | 6.71506 | 3,604.99 |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Worker                      | 0.01504 | 0.01342 | 0.01233 | 0.15202 | 0.00000 | 0.00000 | 0.04133 | 0.04133 | 0.00000 | 0.00969 | 0.00969 | — | 38.2369  | 38.2369  | 0.00088 | 0.00162 | 0.00360 | 38.7455  |

|               |         |         |         |         |         |         |         |         |         |         |         |   |          |          |         |         |         |          |
|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|----------|----------|---------|---------|---------|----------|
| Vendor        | 0.00910 | 0.00307 | 0.13198 | 0.06374 | 0.00074 | 0.00148 | 0.02818 | 0.02967 | 0.00148 | 0.00779 | 0.00927 | — | 103.955  | 103.955  | 0.00586 | 0.01552 | 0.00593 | 108.732  |
| Hauling       | 0.32959 | 0.07275 | 4.38830 | 2.09770 | 0.02315 | 0.04409 | 0.92700 | 0.97109 | 0.04409 | 0.25380 | 0.29789 | — | 3,431.19 | 3,431.19 | 0.27668 | 0.54234 | 0.17465 | 3,599.90 |
| Average Daily | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Worker        | 0.00304 | 0.00271 | 0.00249 | 0.03094 | 0.00000 | 0.00000 | 0.00832 | 0.00832 | 0.00000 | 0.00195 | 0.00195 | — | 7.94315  | 7.94315  | 0.00016 | 0.00033 | 0.01228 | 8.05861  |
| Vendor        | 0.00189 | 0.00065 | 0.02660 | 0.01292 | 0.00015 | 0.00030 | 0.00569 | 0.00600 | 0.00030 | 0.00158 | 0.00188 | — | 21.3522  | 21.3522  | 0.00122 | 0.00319 | 0.02029 | 22.3534  |
| Hauling       | 0.06818 | 0.01540 | 0.88381 | 0.42900 | 0.00476 | 0.00906 | 0.18759 | 0.19665 | 0.00906 | 0.05143 | 0.06049 | — | 704.866  | 704.866  | 0.05685 | 0.11144 | 0.59727 | 740.093  |
| Annual        | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Worker        | 0.00056 | 0.00049 | 0.00045 | 0.00565 | 0.00000 | 0.00000 | 0.00152 | 0.00152 | 0.00000 | 0.00036 | 0.00036 | — | 1.31508  | 1.31508  | 0.00003 | 0.00006 | 0.00203 | 1.33419  |
| Vendor        | 0.00034 | 0.00012 | 0.00485 | 0.00236 | 0.00003 | 0.00006 | 0.00104 | 0.00109 | 0.00006 | 0.00029 | 0.00034 | — | 3.53510  | 3.53510  | 0.00020 | 0.00053 | 0.00336 | 3.70086  |
| Hauling       | 0.01244 | 0.00281 | 0.16130 | 0.07829 | 0.00087 | 0.00165 | 0.03424 | 0.03589 | 0.00165 | 0.00939 | 0.01104 | — | 116.699  | 116.699  | 0.00941 | 0.01845 | 0.09888 | 122.531  |

### 3.4. Grading and Excavation (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 Equipment          | 2.05409 | 2.05409 | 22.3427 | 102.689 | 0.16192 | 0.36978 | —       | 0.36978 | 0.36978 | —       | 0.36978 | —    | 17,528.5 | 17,528.5 | 0.71103 | 0.14221 | —       | 17,588.7 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.01034 | 0.01034 | —       | 0.00157 | 0.00157 | —    | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | —    | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |

|                             |         |         |         |         |         |         |         |         |         |         |         |   |          |          |         |         |         |          |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|----------|----------|---------|---------|---------|----------|
| Off-Road Equipment          | 2.05409 | 2.05409 | 22.3427 | 102.689 | 0.16192 | 0.36978 | —       | 0.36978 | 0.36978 | —       | 0.36978 | — | 17,528.5 | 17,528.5 | 0.71103 | 0.14221 | —       | 17,588.7 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.01034 | 0.01034 | —       | 0.00157 | 0.00157 | — | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Average Daily               | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment          | 0.42207 | 0.42207 | 4.59096 | 21.1005 | 0.03327 | 0.07598 | —       | 0.07598 | 0.07598 | —       | 0.07598 | — | 3,601.75 | 3,601.75 | 0.14610 | 0.02922 | —       | 3,614.11 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00212 | 0.00212 | —       | 0.00032 | 0.00032 | — | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Annual                      | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment          | 0.07703 | 0.07703 | 0.83785 | 3.85083 | 0.00607 | 0.01387 | —       | 0.01387 | 0.01387 | —       | 0.01387 | — | 596.311  | 596.311  | 0.02419 | 0.00484 | —       | 598.357  |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00039 | 0.00039 | —       | 0.00006 | 0.00006 | — | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Offsite                     | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Daily, Summer (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Worker                      | 0.01548 | 0.01386 | 0.01049 | 0.17830 | 0.00000 | 0.00000 | 0.04133 | 0.04133 | 0.00000 | 0.00969 | 0.00969 | — | 41.2722  | 41.2722  | 0.00066 | 0.00162 | 0.13851 | 41.9101  |
| Vendor                      | 0.00928 | 0.00325 | 0.12577 | 0.06206 | 0.00074 | 0.00148 | 0.02818 | 0.02967 | 0.00148 | 0.00779 | 0.00927 | — | 103.884  | 103.884  | 0.00594 | 0.01543 | 0.22880 | 108.860  |

|                           |         |         |         |         |         |         |         |         |         |         |         |   |          |          |         |         |         |          |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|----------|----------|---------|---------|---------|----------|
| Hauling                   | 0.33400 | 0.07606 | 4.15461 | 2.08116 | 0.02315 | 0.04409 | 0.92700 | 0.97109 | 0.04409 | 0.25380 | 0.29789 | — | 3,429.74 | 3,429.74 | 0.27668 | 0.54234 | 6.71506 | 3,604.99 |
| Daily,<br>Winter<br>(Max) | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Worker                    | 0.01504 | 0.01342 | 0.01233 | 0.15202 | 0.00000 | 0.00000 | 0.04133 | 0.04133 | 0.00000 | 0.00969 | 0.00969 | — | 38.2369  | 38.2369  | 0.00088 | 0.00162 | 0.00360 | 38.7455  |
| Vendor                    | 0.00910 | 0.00307 | 0.13198 | 0.06374 | 0.00074 | 0.00148 | 0.02818 | 0.02967 | 0.00148 | 0.00779 | 0.00927 | — | 103.955  | 103.955  | 0.00586 | 0.01552 | 0.00593 | 108.732  |
| Hauling                   | 0.32959 | 0.07275 | 4.38830 | 2.09770 | 0.02315 | 0.04409 | 0.92700 | 0.97109 | 0.04409 | 0.25380 | 0.29789 | — | 3,431.19 | 3,431.19 | 0.27668 | 0.54234 | 0.17465 | 3,599.90 |
| Average<br>Daily          | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Worker                    | 0.00304 | 0.00271 | 0.00249 | 0.03094 | 0.00000 | 0.00000 | 0.00832 | 0.00832 | 0.00000 | 0.00195 | 0.00195 | — | 7.94315  | 7.94315  | 0.00016 | 0.00033 | 0.01228 | 8.05861  |
| Vendor                    | 0.00189 | 0.00065 | 0.02660 | 0.01292 | 0.00015 | 0.00030 | 0.00569 | 0.00600 | 0.00030 | 0.00158 | 0.00188 | — | 21.3522  | 21.3522  | 0.00122 | 0.00319 | 0.02029 | 22.3534  |
| Hauling                   | 0.06818 | 0.01540 | 0.88381 | 0.42900 | 0.00476 | 0.00906 | 0.18759 | 0.19665 | 0.00906 | 0.05143 | 0.06049 | — | 704.866  | 704.866  | 0.05685 | 0.11144 | 0.59727 | 740.093  |
| Annual                    | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Worker                    | 0.00056 | 0.00049 | 0.00045 | 0.00565 | 0.00000 | 0.00000 | 0.00152 | 0.00152 | 0.00000 | 0.00036 | 0.00036 | — | 1.31508  | 1.31508  | 0.00003 | 0.00006 | 0.00203 | 1.33419  |
| Vendor                    | 0.00034 | 0.00012 | 0.00485 | 0.00236 | 0.00003 | 0.00006 | 0.00104 | 0.00109 | 0.00006 | 0.00029 | 0.00034 | — | 3.53510  | 3.53510  | 0.00020 | 0.00053 | 0.00336 | 3.70086  |
| Hauling                   | 0.01244 | 0.00281 | 0.16130 | 0.07829 | 0.00087 | 0.00165 | 0.03424 | 0.03589 | 0.00165 | 0.00939 | 0.01104 | — | 116.699  | 116.699  | 0.00941 | 0.01845 | 0.09888 | 122.531  |

### 3.5. Bank Stabilization (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,<br>Summer<br>(Max)            | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | — | —        |
| Off-Road<br>Equipm<br>ent            | 8.02854 | 6.72566 | 43.2322 | 56.9164 | 0.19069 | 1.31112 | —       | 1.31112 | 1.20623 | —       | 1.20623 | —    | 19,753.8 | 19,753.8 | 0.80130 | 0.16026 | — | 19,821.6 |
| Dust<br>From<br>Material<br>Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | —    | —        | —        | —       | —       | — | —        |

|                             |         |         |         |         |         |         |         |         |         |         |         |   |          |          |         |         |         |          |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|----------|----------|---------|---------|---------|----------|
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment          | 8.02854 | 6.72566 | 43.2322 | 56.9164 | 0.19069 | 1.31112 | —       | 1.31112 | 1.20623 | —       | 1.20623 | — | 19,753.8 | 19,753.8 | 0.80130 | 0.16026 | —       | 19,821.6 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | — | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Average Daily               | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment          | 1.64970 | 1.38198 | 8.88333 | 11.6951 | 0.03918 | 0.26941 | —       | 0.26941 | 0.24786 | —       | 0.24786 | — | 4,058.99 | 4,058.99 | 0.16465 | 0.03293 | —       | 4,072.92 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | — | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Annual                      | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment          | 0.30107 | 0.25221 | 1.62121 | 2.13436 | 0.00715 | 0.04917 | —       | 0.04917 | 0.04523 | —       | 0.04523 | — | 672.013  | 672.013  | 0.02726 | 0.00545 | —       | 674.319  |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | — | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |

|                     |         |         |         |         |         |         |         |         |         |         |         |   |         |         |         |         |         |         |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|---------|---------|---------|---------|---------|---------|
| Offsite             | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Daily, Summer (Max) | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Worker              | 0.01548 | 0.01386 | 0.01049 | 0.17830 | 0.00000 | 0.00000 | 0.04133 | 0.04133 | 0.00000 | 0.00969 | 0.00969 | — | 41.2722 | 41.2722 | 0.00066 | 0.00162 | 0.13851 | 41.9101 |
| Vendor              | 0.00928 | 0.00325 | 0.12577 | 0.06206 | 0.00074 | 0.00148 | 0.02818 | 0.02967 | 0.00148 | 0.00779 | 0.00927 | — | 103.884 | 103.884 | 0.00594 | 0.01543 | 0.22880 | 108.860 |
| Hauling             | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Worker              | 0.01504 | 0.01342 | 0.01233 | 0.15202 | 0.00000 | 0.00000 | 0.04133 | 0.04133 | 0.00000 | 0.00969 | 0.00969 | — | 38.2369 | 38.2369 | 0.00088 | 0.00162 | 0.00360 | 38.7455 |
| Vendor              | 0.00910 | 0.00307 | 0.13198 | 0.06374 | 0.00074 | 0.00148 | 0.02818 | 0.02967 | 0.00148 | 0.00779 | 0.00927 | — | 103.955 | 103.955 | 0.00586 | 0.01552 | 0.00593 | 108.732 |
| Hauling             | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Worker              | 0.00304 | 0.00271 | 0.00249 | 0.03094 | 0.00000 | 0.00000 | 0.00832 | 0.00832 | 0.00000 | 0.00195 | 0.00195 | — | 7.94315 | 7.94315 | 0.00016 | 0.00033 | 0.01228 | 8.05861 |
| Vendor              | 0.00189 | 0.00065 | 0.02660 | 0.01292 | 0.00015 | 0.00030 | 0.00569 | 0.00600 | 0.00030 | 0.00158 | 0.00188 | — | 21.3522 | 21.3522 | 0.00122 | 0.00319 | 0.02029 | 22.3534 |
| Hauling             | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual              | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Worker              | 0.00056 | 0.00049 | 0.00045 | 0.00565 | 0.00000 | 0.00000 | 0.00152 | 0.00152 | 0.00000 | 0.00036 | 0.00036 | — | 1.31508 | 1.31508 | 0.00003 | 0.00006 | 0.00203 | 1.33419 |
| Vendor              | 0.00034 | 0.00012 | 0.00485 | 0.00236 | 0.00003 | 0.00006 | 0.00104 | 0.00109 | 0.00006 | 0.00029 | 0.00034 | — | 3.53510 | 3.53510 | 0.00020 | 0.00053 | 0.00336 | 3.70086 |
| Hauling             | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

### 3.6. Bank Stabilization (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                    | 2.05409 | 2.05409 | 22.3427 | 102.689 | 0.16192 | 0.36978 | —       | 0.36978 | 0.36978 | —       | 0.36978 | — | 17,528.5 | 17,528.5 | 0.71103 | 0.14221 | —       | 17,588.7 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | — | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment          | 2.05409 | 2.05409 | 22.3427 | 102.689 | 0.16192 | 0.36978 | —       | 0.36978 | 0.36978 | —       | 0.36978 | — | 17,528.5 | 17,528.5 | 0.71103 | 0.14221 | —       | 17,588.7 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | — | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Average Daily               | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment          | 0.42207 | 0.42207 | 4.59096 | 21.1005 | 0.03327 | 0.07598 | —       | 0.07598 | 0.07598 | —       | 0.07598 | — | 3,601.75 | 3,601.75 | 0.14610 | 0.02922 | —       | 3,614.11 |
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | — | —        | —        | —       | —       | —       | —        |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Annual                      | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment          | 0.07703 | 0.07703 | 0.83785 | 3.85083 | 0.00607 | 0.01387 | —       | 0.01387 | 0.01387 | —       | 0.01387 | — | 596.311  | 596.311  | 0.02419 | 0.00484 | —       | 598.357  |

|                             |         |         |         |         |         |         |         |         |         |         |         |   |         |         |         |         |         |         |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|---------|---------|---------|---------|---------|---------|
| Dust From Material Movement | —       | —       | —       | —       | —       | —       | 0.00000 | 0.00000 | —       | 0.00000 | 0.00000 | — | —       | —       | —       | —       | —       | —       |
| Onsite truck                | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite                     | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Daily, Summer (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Worker                      | 0.01548 | 0.01386 | 0.01049 | 0.17830 | 0.00000 | 0.00000 | 0.04133 | 0.04133 | 0.00000 | 0.00969 | 0.00969 | — | 41.2722 | 41.2722 | 0.00066 | 0.00162 | 0.13851 | 41.9101 |
| Vendor                      | 0.00928 | 0.00325 | 0.12577 | 0.06206 | 0.00074 | 0.00148 | 0.02818 | 0.02967 | 0.00148 | 0.00779 | 0.00927 | — | 103.884 | 103.884 | 0.00594 | 0.01543 | 0.22880 | 108.860 |
| Hauling                     | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Worker                      | 0.01504 | 0.01342 | 0.01233 | 0.15202 | 0.00000 | 0.00000 | 0.04133 | 0.04133 | 0.00000 | 0.00969 | 0.00969 | — | 38.2369 | 38.2369 | 0.00088 | 0.00162 | 0.00360 | 38.7455 |
| Vendor                      | 0.00910 | 0.00307 | 0.13198 | 0.06374 | 0.00074 | 0.00148 | 0.02818 | 0.02967 | 0.00148 | 0.00779 | 0.00927 | — | 103.955 | 103.955 | 0.00586 | 0.01552 | 0.00593 | 108.732 |
| Hauling                     | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily               | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Worker                      | 0.00304 | 0.00271 | 0.00249 | 0.03094 | 0.00000 | 0.00000 | 0.00832 | 0.00832 | 0.00000 | 0.00195 | 0.00195 | — | 7.94315 | 7.94315 | 0.00016 | 0.00033 | 0.01228 | 8.05861 |
| Vendor                      | 0.00189 | 0.00065 | 0.02660 | 0.01292 | 0.00015 | 0.00030 | 0.00569 | 0.00600 | 0.00030 | 0.00158 | 0.00188 | — | 21.3522 | 21.3522 | 0.00122 | 0.00319 | 0.02029 | 22.3534 |
| Hauling                     | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual                      | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —       | —       | —       | —       |
| Worker                      | 0.00056 | 0.00049 | 0.00045 | 0.00565 | 0.00000 | 0.00000 | 0.00152 | 0.00152 | 0.00000 | 0.00036 | 0.00036 | — | 1.31508 | 1.31508 | 0.00003 | 0.00006 | 0.00203 | 1.33419 |
| Vendor                      | 0.00034 | 0.00012 | 0.00485 | 0.00236 | 0.00003 | 0.00006 | 0.00104 | 0.00109 | 0.00006 | 0.00029 | 0.00034 | — | 3.53510 | 3.53510 | 0.00020 | 0.00053 | 0.00336 | 3.70086 |
| Hauling                     | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

### 3.7. Finished 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  | 8.02854 | 6.72566 | 43.2322 | 56.9164 | 0.19069 | 1.31112 | —       | 1.31112 | 1.20623 | —       | 1.20623 | —    | 19,753.8 | 19,753.8 | 0.80130 | 0.16026 | —       | 19,821.6 |
| Onsite truck        | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | —    | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Average Daily       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment  | 0.21996 | 0.18426 | 1.18444 | 1.55935 | 0.00522 | 0.03592 | —       | 0.03592 | 0.03305 | —       | 0.03305 | —    | 541.199  | 541.199  | 0.02195 | 0.00439 | —       | 543.056  |
| Onsite truck        | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | —    | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Annual              | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |
| Off-Road Equipment  | 0.04014 | 0.03363 | 0.21616 | 0.28458 | 0.00095 | 0.00656 | —       | 0.00656 | 0.00603 | —       | 0.00603 | —    | 89.6017  | 89.6017  | 0.00363 | 0.00073 | —       | 89.9092  |
| Onsite truck        | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | —    | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |
| Offsite             | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |
| Daily, Summer (Max) | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |
| Daily, Winter (Max) | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —    | —        | —        | —       | —       | —       | —        |

|               |         |         |         |         |            |         |         |         |         |         |         |   |         |         |            |         |         |         |
|---------------|---------|---------|---------|---------|------------|---------|---------|---------|---------|---------|---------|---|---------|---------|------------|---------|---------|---------|
| Worker        | 0.01504 | 0.01342 | 0.01233 | 0.15202 | 0.00000    | 0.00000 | 0.04133 | 0.04133 | 0.00000 | 0.00969 | 0.00969 | — | 38.2369 | 38.2369 | 0.00088    | 0.00162 | 0.00360 | 38.7455 |
| Vendor        | 0.00910 | 0.00307 | 0.13198 | 0.06374 | 0.00074    | 0.00148 | 0.02818 | 0.02967 | 0.00148 | 0.00779 | 0.00927 | — | 103.955 | 103.955 | 0.00586    | 0.01552 | 0.00593 | 108.732 |
| Hauling       | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | —       | —       | —       | —       | —          | —       | —       | —       | —       | —       | —       | — | —       | —       | —          | —       | —       | —       |
| Worker        | 0.00041 | 0.00036 | 0.00033 | 0.00413 | 0.00000    | 0.00000 | 0.00111 | 0.00111 | 0.00000 | 0.00026 | 0.00026 | — | 1.05909 | 1.05909 | 0.00002    | 0.00004 | 0.00164 | 1.07448 |
| Vendor        | 0.00025 | 0.00009 | 0.00355 | 0.00172 | 0.00002    | 0.00004 | 0.00076 | 0.00080 | 0.00004 | 0.00021 | 0.00025 | — | 2.84696 | 2.84696 | 0.00016    | 0.00043 | 0.00270 | 2.98045 |
| Hauling       | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | 0.00000 |
| Annual        | —       | —       | —       | —       | —          | —       | —       | —       | —       | —       | —       | — | —       | —       | —          | —       | —       | —       |
| Worker        | 0.00007 | 0.00007 | 0.00006 | 0.00075 | 0.00000    | 0.00000 | 0.00020 | 0.00020 | 0.00000 | 0.00005 | 0.00005 | — | 0.17534 | 0.17534 | < 0.000005 | 0.00001 | 0.00027 | 0.17789 |
| Vendor        | 0.00005 | 0.00002 | 0.00065 | 0.00031 | < 0.000005 | 0.00001 | 0.00014 | 0.00015 | 0.00001 | 0.00004 | 0.00005 | — | 0.47135 | 0.47135 | 0.00003    | 0.00007 | 0.00045 | 0.49345 |
| Hauling       | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | 0.00000 |

### 3.8. Finished 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  | 2.05409 | 2.05409 | 22.3427 | 102.689 | 0.16192 | 0.36978 | —       | 0.36978 | 0.36978 | —       | 0.36978 | —    | 17,528.5 | 17,528.5 | 0.71103 | 0.14221 | —       | 17,588.7 |
| Onsite truck        | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | —    | 0.00000  | 0.00000  | 0.00000 | 0.00000 | 0.00000 | 0.00000  |

|                     |         |         |         |         |         |         |         |         |         |         |         |   |         |         |            |         |         |         |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|---------|---------|------------|---------|---------|---------|
| Average Daily       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —          | —       | —       | —       |
| Off-Road Equipment  | 0.05628 | 0.05628 | 0.61213 | 2.81339 | 0.00444 | 0.01013 | —       | 0.01013 | 0.01013 | —       | 0.01013 | — | 480.233 | 480.233 | 0.01948    | 0.00390 | —       | 481.881 |
| Onsite truck        | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | 0.00000 |
| Annual              | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —          | —       | —       | —       |
| Off-Road Equipment  | 0.01027 | 0.01027 | 0.11171 | 0.51344 | 0.00081 | 0.00185 | —       | 0.00185 | 0.00185 | —       | 0.00185 | — | 79.5081 | 79.5081 | 0.00323    | 0.00065 | —       | 79.7809 |
| Onsite truck        | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | 0.00000 |
| Offsite             | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —          | —       | —       | —       |
| Daily, Summer (Max) | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —          | —       | —       | —       |
| Daily, Winter (Max) | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —          | —       | —       | —       |
| Worker              | 0.01504 | 0.01342 | 0.01233 | 0.15202 | 0.00000 | 0.00000 | 0.04133 | 0.04133 | 0.00000 | 0.00969 | 0.00969 | — | 38.2369 | 38.2369 | 0.00088    | 0.00162 | 0.00360 | 38.7455 |
| Vendor              | 0.00910 | 0.00307 | 0.13198 | 0.06374 | 0.00074 | 0.00148 | 0.02818 | 0.02967 | 0.00148 | 0.00779 | 0.00927 | — | 103.955 | 103.955 | 0.00586    | 0.01552 | 0.00593 | 108.732 |
| Hauling             | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | 0.00000 |
| Average Daily       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —          | —       | —       | —       |
| Worker              | 0.00041 | 0.00036 | 0.00033 | 0.00413 | 0.00000 | 0.00000 | 0.00111 | 0.00111 | 0.00000 | 0.00026 | 0.00026 | — | 1.05909 | 1.05909 | 0.00002    | 0.00004 | 0.00164 | 1.07448 |
| Vendor              | 0.00025 | 0.00009 | 0.00355 | 0.00172 | 0.00002 | 0.00004 | 0.00076 | 0.00080 | 0.00004 | 0.00021 | 0.00025 | — | 2.84696 | 2.84696 | 0.00016    | 0.00043 | 0.00270 | 2.98045 |
| Hauling             | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | 0.00000 |
| Annual              | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | — | —       | —       | —          | —       | —       | —       |
| Worker              | 0.00007 | 0.00007 | 0.00006 | 0.00075 | 0.00000 | 0.00000 | 0.00020 | 0.00020 | 0.00000 | 0.00005 | 0.00005 | — | 0.17534 | 0.17534 | < 0.000005 | 0.00001 | 0.00027 | 0.17789 |

|         |         |         |         |         |            |         |         |         |         |         |         |   |         |         |         |         |         |         |
|---------|---------|---------|---------|---------|------------|---------|---------|---------|---------|---------|---------|---|---------|---------|---------|---------|---------|---------|
| Vendor  | 0.00005 | 0.00002 | 0.00065 | 0.00031 | < 0.000005 | 0.00001 | 0.00014 | 0.00015 | 0.00001 | 0.00004 | 0.00005 | — | 0.47135 | 0.47135 | 0.00003 | 0.00007 | 0.00045 | 0.49345 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000    | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 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)

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

#### 4.10.2. 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 |
|------------------------|------------------------------------------|------------|------------|---------------|---------------------|-------------------|
| Temporary Access       | Linear, Grubbing & Land Clearing         | 6/15/2027  | 6/18/2027  | 5.00000       | 4.00000             | —                 |
| Grading and Excavation | Linear, Grading & Excavation             | 6/21/2027  | 10/1/2027  | 5.00000       | 75.0000             | —                 |
| Bank Stabilization     | Linear, Drainage, Utilities, & Sub-Grade | 6/21/2027  | 10/1/2027  | 5.00000       | 75.0000             | —                 |
| Finished Grading       | Linear, Paving                           | 10/4/2027  | 10/15/2027 | 5.00000       | 10.00000            | —                 |

## 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 |
|------------------------|----------------------------|-----------|-------------|----------------|---------------|------------|-------------|
| Temporary Access       | Excavators                 | Diesel    | Average     | 1.000000       | 8.00000       | 38.0000    | 0.38000     |
| Temporary Access       | Tractors/Loaders/Back hoes | Diesel    | Average     | 1.000000       | 8.00000       | 84.0000    | 0.37000     |
| Temporary Access       | Off-Highway Trucks         | Diesel    | Average     | 2.00000        | 8.00000       | 376.000    | 0.38000     |
| Temporary Access       | Rollers                    | Diesel    | Average     | 1.000000       | 8.00000       | 36.0000    | 0.46000     |
| Temporary Access       | Generator Sets             | Diesel    | Average     | 2.00000        | 24.0000       | 50.0000    | 0.74000     |
| Temporary Access       | Sweepers/Scrubbers         | Diesel    | Average     | 2.00000        | 8.00000       | 376.000    | 0.46000     |
| Temporary Access       | Skid Steer Loaders         | Diesel    | Average     | 1.000000       | 8.00000       | 71.0000    | 0.37000     |
| Grading and Excavation | Excavators                 | Diesel    | Average     | 2.00000        | 8.00000       | 38.0000    | 0.38000     |
| Grading and Excavation | Tractors/Loaders/Back hoes | Diesel    | Average     | 1.000000       | 8.00000       | 84.0000    | 0.37000     |
| Grading and Excavation | Off-Highway Trucks         | Diesel    | Average     | 10.00000       | 8.00000       | 376.000    | 0.38000     |
| Grading and Excavation | Sweepers/Scrubbers         | Diesel    | Average     | 2.00000        | 8.00000       | 376.000    | 0.46000     |
| Grading and Excavation | Generator Sets             | Diesel    | Average     | 2.00000        | 24.0000       | 50.0000    | 0.74000     |
| Grading and Excavation | Rollers                    | Diesel    | Average     | 1.000000       | 8.00000       | 36.0000    | 0.38000     |
| Grading and Excavation | Skid Steer Loaders         | Diesel    | Average     | 1.000000       | 8.00000       | 71.0000    | 0.37000     |
| Bank Stabilization     | Excavators                 | Diesel    | Average     | 2.00000        | 8.00000       | 38.0000    | 0.38000     |
| Bank Stabilization     | Tractors/Loaders/Back hoes | Diesel    | Average     | 1.000000       | 8.00000       | 84.0000    | 0.37000     |
| Bank Stabilization     | Sweepers/Scrubbers         | Diesel    | Average     | 2.00000        | 8.00000       | 376.000    | 0.46000     |
| Bank Stabilization     | Generator Sets             | Diesel    | Average     | 2.00000        | 24.0000       | 50.0000    | 0.74000     |

|                    |                            |        |         |          |         |         |         |
|--------------------|----------------------------|--------|---------|----------|---------|---------|---------|
| Bank Stabilization | Rollers                    | Diesel | Average | 1.000000 | 8.00000 | 36.0000 | 0.38000 |
| Bank Stabilization | Skid Steer Loaders         | Diesel | Average | 1.000000 | 8.00000 | 71.0000 | 0.37000 |
| Bank Stabilization | Off-Highway Trucks         | Diesel | Average | 10.00000 | 8.00000 | 376.000 | 0.38000 |
| Finished Grading   | Rollers                    | Diesel | Average | 1.000000 | 8.00000 | 36.0000 | 0.38000 |
| Finished Grading   | Excavators                 | Diesel | Average | 2.00000  | 8.00000 | 38.0000 | 0.38000 |
| Finished Grading   | Tractors/Loaders/Back hoes | Diesel | Average | 1.000000 | 8.00000 | 84.0000 | 0.37000 |
| Finished Grading   | Generator Sets             | Diesel | Average | 2.00000  | 24.0000 | 50.0000 | 0.74000 |
| Finished Grading   | Skid Steer Loaders         | Diesel | Average | 1.000000 | 8.00000 | 71.0000 | 0.37000 |
| Finished Grading   | Off-Highway Trucks         | Diesel | Average | 10.00000 | 8.00000 | 376.000 | 0.38000 |
| Finished Grading   | Sweepers/Scrubbers         | Diesel | Average | 2.00000  | 8.00000 | 376.000 | 0.46000 |

### 5.2.2. Mitigated

| Phase Name             | Equipment Type             | Fuel Type | Engine Tier  | Number per Day | Hours Per Day | Horsepower | Load Factor |
|------------------------|----------------------------|-----------|--------------|----------------|---------------|------------|-------------|
| Temporary Access       | Excavators                 | Diesel    | Tier 4 Final | 1.000000       | 8.00000       | 38.0000    | 0.38000     |
| Temporary Access       | Tractors/Loaders/Back hoes | Diesel    | Tier 4 Final | 1.000000       | 8.00000       | 84.0000    | 0.37000     |
| Temporary Access       | Off-Highway Trucks         | Diesel    | Tier 4 Final | 2.00000        | 8.00000       | 376.000    | 0.38000     |
| Temporary Access       | Rollers                    | Diesel    | Tier 4 Final | 1.000000       | 8.00000       | 36.0000    | 0.46000     |
| Temporary Access       | Generator Sets             | Diesel    | Tier 4 Final | 2.00000        | 24.0000       | 50.0000    | 0.74000     |
| Temporary Access       | Sweepers/Scrubbers         | Diesel    | Tier 4 Final | 2.00000        | 8.00000       | 376.000    | 0.46000     |
| Temporary Access       | Skid Steer Loaders         | Diesel    | Tier 4 Final | 1.000000       | 8.00000       | 71.0000    | 0.37000     |
| Grading and Excavation | Excavators                 | Diesel    | Tier 4 Final | 2.00000        | 8.00000       | 38.0000    | 0.38000     |
| Grading and Excavation | Tractors/Loaders/Back hoes | Diesel    | Tier 4 Final | 1.000000       | 8.00000       | 84.0000    | 0.37000     |
| Grading and Excavation | Off-Highway Trucks         | Diesel    | Tier 4 Final | 10.00000       | 8.00000       | 376.000    | 0.38000     |
| Grading and Excavation | Sweepers/Scrubbers         | Diesel    | Tier 4 Final | 2.00000        | 8.00000       | 376.000    | 0.46000     |

|                        |                            |        |              |          |         |         |         |
|------------------------|----------------------------|--------|--------------|----------|---------|---------|---------|
| Grading and Excavation | Generator Sets             | Diesel | Tier 4 Final | 2.00000  | 24.0000 | 50.0000 | 0.74000 |
| Grading and Excavation | Rollers                    | Diesel | Tier 4 Final | 1.000000 | 8.00000 | 36.0000 | 0.38000 |
| Grading and Excavation | Skid Steer Loaders         | Diesel | Tier 4 Final | 1.000000 | 8.00000 | 71.0000 | 0.37000 |
| Bank Stabilization     | Excavators                 | Diesel | Tier 4 Final | 2.00000  | 8.00000 | 38.0000 | 0.38000 |
| Bank Stabilization     | Tractors/Loaders/Back hoes | Diesel | Tier 4 Final | 1.000000 | 8.00000 | 84.0000 | 0.37000 |
| Bank Stabilization     | Sweepers/Scrubbers         | Diesel | Tier 4 Final | 2.00000  | 8.00000 | 376.000 | 0.46000 |
| Bank Stabilization     | Generator Sets             | Diesel | Tier 4 Final | 2.00000  | 24.0000 | 50.0000 | 0.74000 |
| Bank Stabilization     | Rollers                    | Diesel | Tier 4 Final | 1.000000 | 8.00000 | 36.0000 | 0.38000 |
| Bank Stabilization     | Skid Steer Loaders         | Diesel | Tier 4 Final | 1.000000 | 8.00000 | 71.0000 | 0.37000 |
| Bank Stabilization     | Off-Highway Trucks         | Diesel | Tier 4 Final | 10.00000 | 8.00000 | 376.000 | 0.38000 |
| Finished Grading       | Rollers                    | Diesel | Tier 4 Final | 1.000000 | 8.00000 | 36.0000 | 0.38000 |
| Finished Grading       | Excavators                 | Diesel | Tier 4 Final | 2.00000  | 8.00000 | 38.0000 | 0.38000 |
| Finished Grading       | Tractors/Loaders/Back hoes | Diesel | Tier 4 Final | 1.000000 | 8.00000 | 84.0000 | 0.37000 |
| Finished Grading       | Generator Sets             | Diesel | Tier 4 Final | 2.00000  | 24.0000 | 50.0000 | 0.74000 |
| Finished Grading       | Skid Steer Loaders         | Diesel | Tier 4 Final | 1.000000 | 8.00000 | 71.0000 | 0.37000 |
| Finished Grading       | Off-Highway Trucks         | Diesel | Tier 4 Final | 10.00000 | 8.00000 | 376.000 | 0.38000 |
| Finished Grading       | Sweepers/Scrubbers         | Diesel | Tier 4 Final | 2.00000  | 8.00000 | 376.000 | 0.46000 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name       | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix   |
|------------------|-----------|-----------------------|----------------|---------------|
| Temporary Access | Worker    | 5.00000               | 11.7000        | LDA,LDT1,LDT2 |
| Temporary Access | Vendor    | 4.00000               | 8.40000        | HHDT,MHDT     |
| Temporary Access | Hauling   | 0.00000               | 20.0000        | HHDT          |

|                        |              |         |         |               |
|------------------------|--------------|---------|---------|---------------|
| Temporary Access       | Onsite truck | 0.00000 | 0.00000 | HHDT          |
| Grading and Excavation | Worker       | 5.00000 | 11.7000 | LDA,LDT1,LDT2 |
| Grading and Excavation | Vendor       | 4.00000 | 8.40000 | HHDT,MHDT     |
| Grading and Excavation | Hauling      | 50.0000 | 20.0000 | HHDT          |
| Grading and Excavation | Onsite truck | 0.00000 | 0.00000 | HHDT          |
| Bank Stabilization     | Worker       | 5.00000 | 11.7000 | LDA,LDT1,LDT2 |
| Bank Stabilization     | Vendor       | 4.00000 | 8.40000 | HHDT,MHDT     |
| Bank Stabilization     | Hauling      | 0.00000 | 20.0000 | HHDT          |
| Bank Stabilization     | Onsite truck | 0.00000 | 0.00000 | HHDT          |
| Finished Grading       | Worker       | 5.00000 | 11.7000 | LDA,LDT1,LDT2 |
| Finished Grading       | Vendor       | 4.00000 | 8.40000 | HHDT,MHDT     |
| Finished Grading       | Hauling      | 0.00000 | 20.0000 | HHDT          |
| Finished Grading       | Onsite truck | 0.00000 | 0.00000 | HHDT          |

### 5.3.2. Mitigated

| Phase Name             | Trip Type    | One-Way Trips per Day | Miles per Trip | Vehicle Mix   |
|------------------------|--------------|-----------------------|----------------|---------------|
| Temporary Access       | Worker       | 5.00000               | 11.7000        | LDA,LDT1,LDT2 |
| Temporary Access       | Vendor       | 4.00000               | 8.40000        | HHDT,MHDT     |
| Temporary Access       | Hauling      | 0.00000               | 20.0000        | HHDT          |
| Temporary Access       | Onsite truck | 0.00000               | 0.00000        | HHDT          |
| Grading and Excavation | Worker       | 5.00000               | 11.7000        | LDA,LDT1,LDT2 |
| Grading and Excavation | Vendor       | 4.00000               | 8.40000        | HHDT,MHDT     |
| Grading and Excavation | Hauling      | 50.0000               | 20.0000        | HHDT          |
| Grading and Excavation | Onsite truck | 0.00000               | 0.00000        | HHDT          |
| Bank Stabilization     | Worker       | 5.00000               | 11.7000        | LDA,LDT1,LDT2 |
| Bank Stabilization     | Vendor       | 4.00000               | 8.40000        | HHDT,MHDT     |
| Bank Stabilization     | Hauling      | 0.00000               | 20.0000        | HHDT          |
| Bank Stabilization     | Onsite truck | 0.00000               | 0.00000        | HHDT          |

|                  |              |         |         |               |
|------------------|--------------|---------|---------|---------------|
| Finished Grading | Worker       | 5.00000 | 11.7000 | LDA,LDT1,LDT2 |
| Finished Grading | Vendor       | 4.00000 | 8.40000 | HHDT,MHDT     |
| Finished Grading | Hauling      | 0.00000 | 20.0000 | HHDT          |
| Finished Grading | Onsite truck | 0.00000 | 0.00000 | HHDT          |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

| Control Strategies Applied                      | PM10 Reduction | PM2.5 Reduction |
|-------------------------------------------------|----------------|-----------------|
| Water unpaved roads twice daily                 | 55%            | 55%             |
| Limit vehicle speeds on unpaved roads to 25 mph | 44%            | 44%             |
| Sweep paved roads once per month                | 9%             | 9%              |

## 5.5. Architectural Coatings

## 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) |
|------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|---------------------|
| Temporary Access       | 0.00000                         | 0.00000                         | 0.37000              | 0.00000                       | 0.00000             |
| Grading and Excavation | 15,850.0                        | 13,900.0                        | 0.37000              | 0.00000                       | 0.00000             |
| Bank Stabilization     | 0.00000                         | 0.00000                         | 0.37000              | 0.00000                       | 0.00000             |

### 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

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2     | CH4     | N2O     |
|------|--------------|---------|---------|---------|
| 2027 | 0.00000      | 203.983 | 0.03300 | 0.00400 |

## 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 | 14.7300                     | annual days of extreme heat                |
| Extreme Precipitation        | 3.65000                     | annual days with precipitation above 20 mm |
| Sea Level Rise               | —                           | meters of inundation depth                 |
| Wildfire                     | 14.8900                     | 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  $\frac{3}{4}$  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.

## 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                        | 20.8463                         |
| AQ-PM                           | 19.7013                         |
| AQ-DPM                          | 75.3578                         |
| Drinking Water                  | 12.6265                         |
| Lead Risk Housing               | 6.07435                         |
| Pesticides                      | 0.00000                         |
| Toxic Releases                  | 37.5344                         |
| Traffic                         | 69.2750                         |
| Effect Indicators               | —                               |
| CleanUp Sites                   | 79.7872                         |
| Groundwater                     | 56.1348                         |
| Haz Waste Facilities/Generators | 88.7492                         |
| Impaired Water Bodies           | 0.00000                         |
| Solid Waste                     | 14.4330                         |
| Sensitive Population            | —                               |
| Asthma                          | 23.8285                         |
| Cardio-vascular                 | 42.8091                         |
| Low Birth Weights               | 97.3569                         |
| Socioeconomic Factor Indicators | —                               |
| Education                       | 40.0658                         |
| Housing                         | 7.69328                         |
| Linguistic                      | 78.0485                         |
| Poverty                         | 14.2714                         |
| Unemployment                    | 18.3108                         |

## 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                                | 89.78570512                     |
| Employed                                     | 76.78686                        |
| Median HI                                    | 94.76453227                     |
| Education                                    | —                               |
| Bachelor's or higher                         | 82.0993199                      |
| High school enrollment                       | 22.2764019                      |
| Preschool enrollment                         | 65.86680354                     |
| Transportation                               | —                               |
| Auto Access                                  | 61.56807391                     |
| Active commuting                             | 34.2871808                      |
| Social                                       | —                               |
| 2-parent households                          | 61.76055434                     |
| Voting                                       | 67.70178365                     |
| Neighborhood                                 | —                               |
| Alcohol availability                         | 68.7925061                      |
| Park access                                  | 81.35506224                     |
| Retail density                               | 67.08584627                     |
| Supermarket access                           | 94.25125112                     |
| Tree canopy                                  | 21.67329655                     |
| Housing                                      | —                               |
| Homeownership                                | 90.44013859                     |
| Housing habitability                         | 86.61619402                     |
| Low-inc homeowner severe housing cost burden | 47.56833055                     |
| Low-inc renter severe housing cost burden    | 85.05068651                     |

|                                       |             |
|---------------------------------------|-------------|
| Uncrowded housing                     | 44.92493263 |
| Health Outcomes                       | —           |
| Insured adults                        | 95.73976646 |
| Arthritis                             | 86.8        |
| Asthma ER Admissions                  | 82.4        |
| High Blood Pressure                   | 52.5        |
| Cancer (excluding skin)               | 63.4        |
| Asthma                                | 99.2        |
| Coronary Heart Disease                | 88.8        |
| Chronic Obstructive Pulmonary Disease | 95.5        |
| Diagnosed Diabetes                    | 57.0        |
| Life Expectancy at Birth              | 92.4        |
| Cognitively Disabled                  | 90.0        |
| Physically Disabled                   | 88.8        |
| Heart Attack ER Admissions            | 52.8        |
| Mental Health Not Good                | 96.1        |
| Chronic Kidney Disease                | 85.5        |
| Obesity                               | 99.4        |
| Pedestrian Injuries                   | 48.1        |
| Physical Health Not Good              | 90.6        |
| Stroke                                | 88.3        |
| Health Risk Behaviors                 | —           |
| Binge Drinking                        | 98.9        |
| Current Smoker                        | 95.0        |
| No Leisure Time for Physical Activity | 59.1        |
| Climate Change Exposures              | —           |
| Wildfire Risk                         | 0.0         |
| SLR Inundation Area                   | 46.3        |

|                                  |      |
|----------------------------------|------|
| Children                         | 75.0 |
| Elderly                          | 41.5 |
| English Speaking                 | 32.2 |
| Foreign-born                     | 94.8 |
| Outdoor Workers                  | 96.4 |
| Climate Change Adaptive Capacity | —    |
| Impervious Surface Cover         | 24.6 |
| Traffic Density                  | 67.5 |
| Traffic Access                   | 67.3 |
| Other Indices                    | —    |
| Hardship                         | 34.4 |
| Other Decision Support           | —    |
| 2016 Voting                      | 79.7 |

### 7.3. Overall Health & Equity Scores

| Metric                                                                              | Result for Project Census Tract |
|-------------------------------------------------------------------------------------|---------------------------------|
| CalEnviroScreen 4.0 Score for Project Location (a)                                  | 37.0000                         |
| Healthy Places Index Score for Project Location (b)                                 | 89.0000                         |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535)           | No                              |
| Project Located in a Low-Income Community (Assembly Bill 1550)                      | No                              |
| 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

### 8.1. Justifications

| Screen                                    | Justification                      |
|-------------------------------------------|------------------------------------|
| Construction: Construction Phases         | Applicant Response to Data Request |
| Construction: Off-Road Equipment          | Applicant Response to Data Request |
| Construction: Dust From Material Movement | Applicant Response to Data Request |
| Construction: Trips and VMT               | Applicant Response to Data Request |

### 8.4. Construction

#### 8.4.4. Dust from Material Movement

| Phase Name             | Model Parameter    | Units       | Default Value | New Value |
|------------------------|--------------------|-------------|---------------|-----------|
| Temporary Access       | Material Imported  | Cubic Yards | —             | 0.00000   |
| Temporary Access       | Material Exported  | Cubic Yards | —             | 0.00000   |
| Temporary Access       | Total Acres Graded | acres       | 2.70000       | 0.37000   |
| Grading and Excavation | Material Imported  | Cubic Yards | —             | 15,850.0  |
| Grading and Excavation | Material Exported  | Cubic Yards | —             | 13,900.0  |
| Grading and Excavation | Total Acres Graded | acres       | 2.70000       | 0.37000   |
| Bank Stabilization     | Material Imported  | Cubic Yards | —             | 0.00000   |
| Bank Stabilization     | Material Exported  | Cubic Yards | —             | 0.00000   |
| Bank Stabilization     | Total Acres Graded | acres       | 2.70000       | 0.37000   |

#### 8.4.6. Trips and VMT

| Phase Name | Trip Type | Model Parameter | Default Value | New Value |
|------------|-----------|-----------------|---------------|-----------|
|------------|-----------|-----------------|---------------|-----------|

|                        |         |                       |         |         |
|------------------------|---------|-----------------------|---------|---------|
| Temporary Access       | Worker  | One-Way Trips per Day | 0.00000 | 5.00000 |
| Temporary Access       | Vendor  | One-Way Trips per Day | 0.00000 | 4.00000 |
| Grading and Excavation | Worker  | One-Way Trips per Day | 0.00000 | 5.00000 |
| Grading and Excavation | Vendor  | One-Way Trips per Day | 0.00000 | 4.00000 |
| Grading and Excavation | Hauling | One-Way Trips per Day | 49.5867 | 50.0000 |
| Bank Stabilization     | Worker  | One-Way Trips per Day | 0.00000 | 5.00000 |
| Bank Stabilization     | Vendor  | One-Way Trips per Day | 0.00000 | 4.00000 |
| Finished Grading       | Worker  | One-Way Trips per Day | 0.00000 | 5.00000 |
| Finished Grading       | Vendor  | One-Way Trips per Day | 0.00000 | 4.00000 |



## 1.0 INTRODUCTION

This document presents the results of an air quality analysis prepared for the Santa Clara Valley Water District (Valley Water) Tularcitos Creek Milpitas Project (project). This document provides an overview of the existing air quality conditions at the project site, the air quality regulatory framework, and an analysis of potential air quality impacts that would result from implementation of the project. Issues related to climate change and greenhouse gas (GHG) emissions are also included.

The supporting information, methodology, and assumptions used in the construction air emissions inventory are provided in:

- **Attachment A: Construction Emissions Inventory Supporting Information**

## 2.0 PROJECT OVERVIEW

Valley Water is currently proposing the Tularcitos Creek Downstream North Hillview Drive Levee Repair. The proposed project is the repair of approximately 2,815 linear feet (by eight feet wide with a depth of three feet) of a non-accredited levee that has eroded due to damage from rodent activity along the west bank of Tularcitos Creek in the City of Milpitas. The project involves dewatering, installation and removal of a temporary access ramp, and bank stabilization along Tularcitos Creek between North Hillview Drive and Paseo Refugio in the City of Milpitas. The project area is approximately 2.7 acres. Work would only occur Monday through Friday between 7 a.m. and 7 p.m. Project generators (one primary and one backup) would operate 24 hours per day, seven days per week during the construction activities. The generators would be placed at the top of the left bank (westside), looking downstream, as far from residential areas as feasible. Project would be completed in approximately 120 working days.

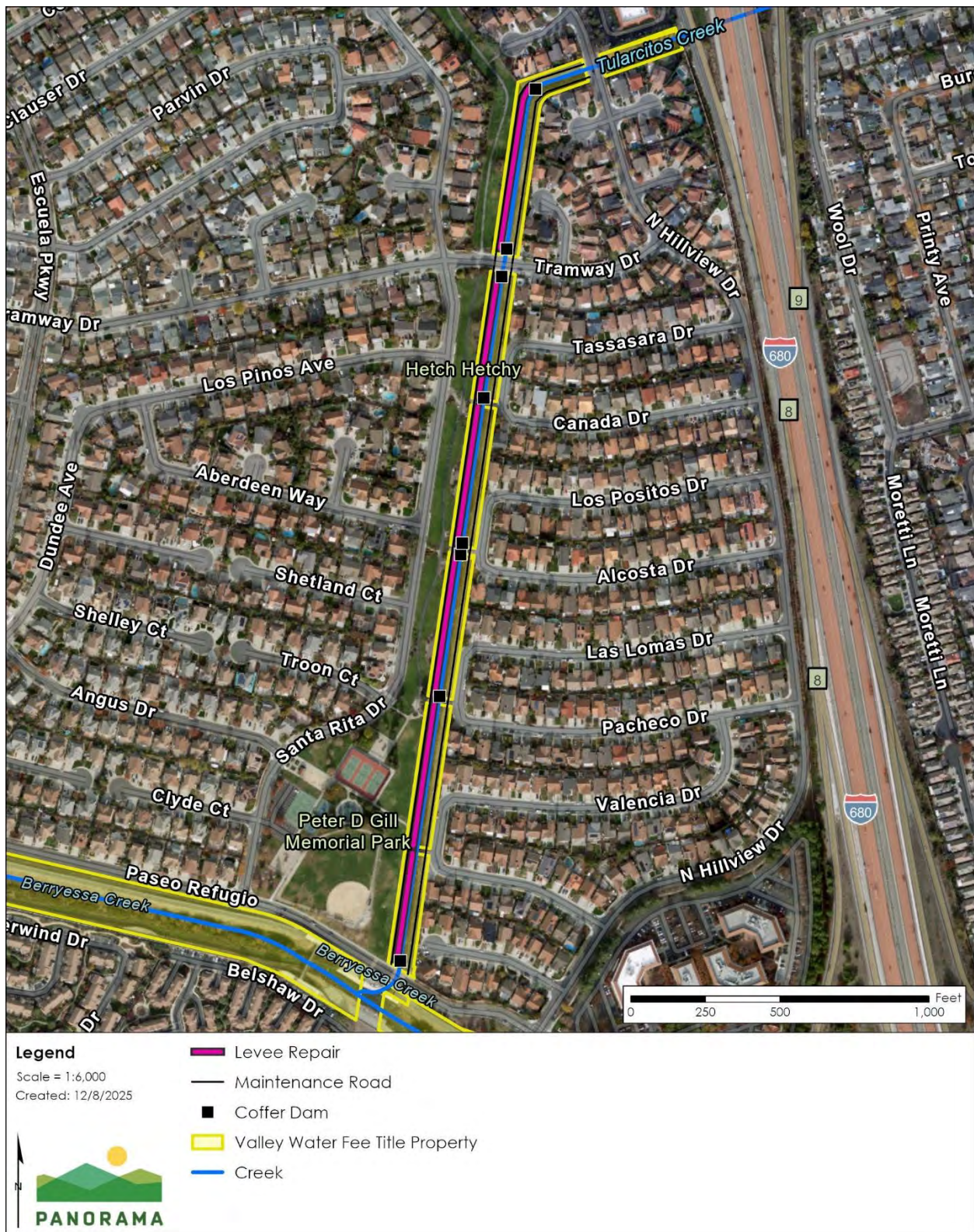
The proposed project sites are located within the City of Milpitas, on Valley Water property, as shown in **Figure 1: Regional Overview**. Repair work would occur along and within the levee. The Tularcitos Creek, where project work would occur, is shown in **Figure 2: Project Location**.

**Figure 1      Regional Overview**





**Figure 2 Project Location**



### 3.0 ANALYSIS METHODOLOGY

Intermittent (short-term construction emissions that occur from activities, such as 1) temporary access ramp installation/removal, 2) grading and excavation, 3) bank stabilization, and 4) finished grading were evaluated. The analysis focuses on daily emissions from construction activities. The air quality analysis is consistent with the methods described in the BAAQMD *CEQA Air Quality Guidelines*. Mitigation measures are presented to reduce impacts to less than significant, where applicable.

The air quality analysis includes a review of criteria pollutant<sup>1</sup> emissions such as carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), volatile organic compounds (VOC) as reactive organic gases (ROG), particulate matter less than 10 micrometers (coarse particulate or PM<sub>10</sub>), and particulate matter less than 2.5 micrometers (fine particulate or PM<sub>2.5</sub>).

Regulatory models used to estimate air quality impacts include:

- California Air Pollution Officers Association (CAPCOA) CalEEMod (California Emissions Estimator Model Version 2022.1)<sup>2</sup> is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria air pollutants and GHG emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

### 4.0 EXISTING CONDITIONS

The project sites are located within the San Francisco Bay Area Air Basin (Air Basin), which encompasses Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin, and Napa Counties, and the southern portions of Solano and Sonoma Counties. The Air Basin is characterized by complex terrain which distorts normal wind flow patterns, consisting of coastal mountain ranges, inland valleys, and bays.

#### Meteorological Conditions

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions, including wind speed, wind direction, stability, and air temperature, in combination with local surface topography (i.e., geographic features such as mountains, valleys, and San Francisco Bay), determine the effect of air pollutant emissions on local air quality.

The climate of the Air Basin, including San Jose, is a Mediterranean-type climate characterized by warm, dry summers and mild, wet winters. The climate is determined largely by a high-pressure system that is

---

<sup>1</sup> Criteria air pollutants refer to those air pollutants for which the USEPA and CARB has established National Ambient Air Quality Standards and California Ambient Air Quality Standards under the Federal Clean Air Act.

<sup>2</sup> California Air Pollution Officers Association, *California Emissions Estimator Model User Guide Version 2022.1*, April 2022, <http://www.caleemod.com/>

often present over the eastern Pacific Ocean off the West Coast of North America. In winter, the Pacific high-pressure system shifts southward, allowing storms to pass through the region. During summer and fall, air emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are favorable to the formation of photochemical pollutants, such as ozone and secondary particulates, such as sulfates and nitrates.

The project site lies in the Santa Clara Valley climatological sub-region of the Bay Area. The northwest-southeast oriented Santa Clara Valley is bounded by the Santa Cruz Mountains to the west, the Diablo Range to the east, the San Francisco Bay to the north and the convergence of the Gabilan Range and the Diablo Range to the south. Temperatures are warm in summer, under mostly clear skies, although a relatively large diurnal range results in cool nights. Winter temperatures are mild, except for very cool but generally frostless mornings. At the northern end of the Santa Clara Valley, the San Jose Airport mean maximum temperatures range from the high 70's to the low 80's during the summer to the high 50's-low 60's during the winter, and mean minimum temperatures range from the high 50's during the summer to the low 40's during the winter.

The wind patterns in the Valley are influenced greatly by the terrain, resulting in a prevailing flow roughly parallel to the Valley's northwest-southeast axis with a north-northwesterly sea breeze extending up the valley during the afternoon and early evening and a light south-southeasterly drainage flow occurring during the late evening and early morning. In summer a convergence zone is sometimes observed in the southern end of the Valley between Gilroy and Morgan Hill when air flowing from Monterey Bay through the Pajaro Gap gets channeled northward into the south end of the Santa Clara Valley and meets with the prevailing north-northwest winds. Speeds are greatest in the spring and summer, and least in the fall and winter. seasons. Nighttime and early morning hours have light winds and are frequently calm in all seasons, while summer afternoon and evenings are quite breezy. Strong winds are rare, coming only with an occasional winter storm.<sup>3</sup>

## **Criteria Air Pollutants**

The following provides a summary of the potential health and welfare effects and typical sources of each of the criteria air pollutants and air toxics.

### **Ozone**

Ozone (or O<sub>3</sub>) is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. O<sub>3</sub> is not emitted directly into the atmosphere but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving VOC and NO<sub>x</sub>. VOC and NO<sub>x</sub> are known as precursor compounds for O<sub>3</sub>. Substantial ozone production generally requires O<sub>3</sub> precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. O<sub>3</sub> is a regional air pollutant because it is not emitted directly by sources but is formed downwind of sources of VOC and NO<sub>x</sub> under the influence of wind and

---

<sup>3</sup> Bay Area Air Quality Management District, *Climate, Physiography, and Air Pollution Potential – Bay Area and Its Subregions*.



sunlight. O<sub>3</sub> concentrations tend to be higher in the late spring, summer, and fall, when long sunny days combine with regional air subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds.

### **Carbon Monoxide**

CO is a nonreactive pollutant that is a product of incomplete combustion of organic material, and is mostly associated with motor vehicle traffic, and in wintertime, with wood-burning stoves and fireplaces. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity, resulting in reduced levels of oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia. CO measurements and modeling were important in the early 1980s when CO levels were regularly exceeded throughout California, but in more recent years, CO measurements and modeling are not a priority in most California air districts due to the retirement of older vehicles, fewer emissions from new vehicles, and improvements to fuels.

### **Nitrogen Oxides**

When combustion temperatures are extremely high, as in aircraft, truck and automobile engines, atmospheric nitrogen combines with oxygen to form various oxides of nitrogen. Nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) are the most significant air pollutants generally referred to as NO<sub>x</sub>. Nitric oxide is a colorless and odorless gas that is relatively harmless to humans, quickly converts to NO<sub>2</sub> and can be measured. Nitrogen dioxide has been found to be a lung irritant capable of producing pulmonary edema. Inhaling NO<sub>2</sub> can lead to respiratory illnesses such as bronchitis and pneumonia.

### **Volatile Organic Compounds**

VOC means any compound of carbon, excluding carbon monoxide, carbon dioxide (CO<sub>2</sub>), carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions and thus, is a precursor of ozone formation. VOC includes a variety of chemicals, some of which may have short- and long-term adverse health effects. VOC are emitted by a wide array of products numbering in the thousands. Examples include paints and lacquers, paint strippers, cleaning supplies, building materials and furnishings, as well as fuel storage and use.

VOC can cause eye, nose, and throat irritation; headaches, loss of coordination, nausea; and damage to liver, kidney, and central nervous system. Some organics can cause cancer in animals; some are suspected or known to cause cancer in humans. The ability of organic chemicals to cause health effects varies greatly from those that are highly toxic, to those with no known health effects. As with other pollutants, the extent and nature of the health effect will depend on many factors including level of exposure and length of time exposed. Eye and respiratory tract irritation, headaches, dizziness, visual disorders, and memory

impairment are among the immediate symptoms that some people have experienced soon after exposure to some organics.

### **Particulate Matter**

PM<sub>10</sub> and PM<sub>2.5</sub> consist of airborne particles that measure 10 micrometers or less in diameter and 2.5 micrometers or less in diameter, respectively. PM<sub>10</sub> and PM<sub>2.5</sub> represent fractions of particulate matter that can be inhaled into the air passages and the lungs, causing adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, wood burning stoves and fireplaces, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition, construction activities and mining, are more local in nature, while others such as vehicular traffic and wood burning stoves and fireplaces, have a more regional effect.

Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates can also damage materials and reduce visibility. Dust comprised of large particles (diameter greater than 10 micrometers) settles out rapidly and is easily filtered by human breathing passages. This dust is of concern more as a soiling nuisance rather than a health hazard. The remaining fractions, PM<sub>10</sub> and PM<sub>2.5</sub>, are a health concern particularly at levels above the federal and California ambient air quality standards. PM<sub>2.5</sub> (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and thus penetrate to the deepest parts of the lungs.

Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, coughing, bronchitis, and respiratory illnesses in children. Mortality studies since the 1990s have shown a statistically significant direct association between mortality (premature deaths) and daily concentrations of particulate matter in the air. Despite important gaps in scientific knowledge and continued reasons for some skepticism, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health. The CARB has estimated that achieving the ambient air quality standards for PM<sub>10</sub> could reduce premature mortality rates by 6,500 cases per year.

### **Sulfur Dioxide**

SO<sub>2</sub> is a combustion product of sulfur or sulfur-containing fuels such as coal and diesel. SO<sub>2</sub> is also a precursor to the formation of atmospheric sulfate and particulate matter and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

### **Lead**

Lead has a range of adverse neurotoxin health effects and was released into the atmosphere via leaded gasoline products. The phase-out of leaded gasoline in California has resulted in dramatically decreased levels of atmospheric lead. Metal processing is currently the primary source of lead emissions in the SCAB. The highest concentrations of lead in air are generally found near lead smelters and general aviation airports; where piston aircraft use leaded fuel. Other stationary sources that generate lead emissions include waste incinerators, utilities, and lead-acid battery manufacturers.

## **Sulfates**

Sulfates are the fully oxidized ionic form of sulfur produced when sulfur dioxide is fully oxidized in the atmosphere. Sulfates are produced by emissions from automobiles, power plants, and industrial activity, and contribute to general atmospheric haziness. Typical health effects associated with exposure to sulfates include respiratory illness and an increased risk of cardio-pulmonary disease.

## **Vinyl Chloride**

Vinyl chloride is an artificially created colorless gas with a mild, slightly sweet odor. The gas is used in the manufacture of vinyl products, including polyvinyl chloride plastic. Vinyl chloride emissions are produced from the vinyl manufacturing process as well as from the breakdown of vinyl products in landfills and hazardous waste sites. The health effects associated with vinyl chloride include dizziness, headaches, and drowsiness from short-term exposure, and liver damage and cancer resulting from long-term exposure.

## **Hydrogen Sulfide**

H<sub>2</sub>S is a naturally occurring, colorless gas that at low concentrations produces a distinctive rotten egg odor. At higher concentrations, olfactory fatigue prevents detection of odor. The gas is produced through the bacteriological breakdown of organic materials as well as during oil and gas production and geothermal power generation. Health effects associated with H<sub>2</sub>S include exposure to a disagreeable odor, coughing, irritation to eyes, and impairment of the respiratory system.

## **Visibility Reducing Particles**

Visibility reducing particles are particulate matter composed of many different substances that are suspended in the atmosphere and contribute to haze and diminished visibility.

## **Ambient Air Quality Standards**

Regulation of air pollutants is achieved through both national and state ambient air quality standards and emissions limits for individual sources. Regulations implementing the federal Clean Air Act and its subsequent amendments established National Ambient Air Quality Standards (NAAQS) for the six criteria pollutants. California has adopted more stringent California Ambient Air Quality Standards (CAAQS) for most of the criteria air pollutants. In addition, California has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Because of the meteorological conditions in the state, there is considerable difference between state and federal standards in California.

The NAAQS and CAAQS are intended to protect public health and welfare, and they incorporate an adequate margin of safety. They are designed to protect those segments of the public most susceptible to respiratory distress, known as sensitive receptors, including asthmatics, the very young, elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels somewhat above the ambient air quality standards before adverse health effects are observed.

Under amendments to the federal Clean Air Act, USEPA has classified air basins or portions thereof, as either “attainment” or “non-attainment” for each criteria air pollutant, based on whether or not the NAAQS have been achieved. The California Clean Air Act, which is patterned after the federal Clean Air



Act, also requires areas to be designated as “attainment” or “non-attainment” for the CAAQS. Thus, areas in California have two sets of attainment/non-attainment designations: one set with respect to the NAAQS and one set with respect to the CAAQS.

## **Toxic Air Contaminants**

Toxic air contaminants (TAC) are regulated under both state and federal laws. Federal laws use the term “Hazardous Air Pollutants” (HAP) to refer to the same types of compounds that are referred to as TAC under state law. Both terms encompass essentially the same compounds. Under the 1990 Federal Clean Air Act Amendments, 189 substances are regulated as HAP.

With respect to state law, in 1983 the California legislature adopted Assembly Bill 1807 (AB 1807), which establishes a process for identifying TAC and provides the authority for developing retrofit air toxics control measures on a statewide basis. Air toxics in California may also be regulated because of another state law, the Air Toxics “Hot Spots” Information and Assessment Act of 1987, or Assembly Bill 2588 (AB 2588). Under AB 2588, TAC from individual facilities must be quantified and reported to the local air pollution control agency. The facilities are then prioritized by the local agencies based on the quantity and toxicity of these emissions, and on their proximity to areas where the public may be exposed. In establishing priorities, the air districts are to consider the potency, toxicity, quantity, and volume of hazardous materials released from the facility, the proximity of the facility to potential receptors, and any other factors that the air district determines may indicate that the facility may pose a significant risk. High priority facilities are required to perform a Health Risk Screening Assessment, and if specific risk thresholds are exceeded, they are required to communicate the results to the public in the form of notices and public meetings. Depending on the health risk levels, emitting facilities can be required to implement varying levels of risk reduction measures. CARB identified approximately 200 TAC, including the 189 federal HAP, under AB 2588.

## **Regional Clean Air Plan**

On April 20, 2017, BAAQMD released the *2017 Clean Air Plan*.<sup>4</sup> The 2017 Clean Air Plan/Regional Climate Protection Strategy (CAP/RCPS) provides a roadmap for BAAQMD’s efforts over the next few years to reduce air pollution and protect public health and the global climate. Measures of the 2017 CAP addressing the transportation sector are in direct support of *Plan Bay Area 2040*, which was prepared by the Association of Bay Area Governments and the Metropolitan Transportation Commission and includes the region’s Sustainable Communities Strategy and the 2040 Regional Transportation Plan.

Highlights of the 2017 Clean Air Plan control strategy include:

- Limit Combustion: Develop a region-wide strategy to improve fossil fuel combustion efficiency at industrial facilities, beginning with the three largest sources of industrial emissions: oil refineries, power plants, and cement plants.

---

<sup>4</sup> Bay Area Air Quality Management District, *2017 Clean Air Plan*, April 20, 2017, [http://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a\\_-proposed-final-cap-vol-1-pdf.pdf?la=en](http://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en)

- **Stop Methane Leaks:** Reduce methane emissions from landfills, and oil and natural gas production and distribution.
- **Reduce Exposure to Toxics:** Reduce emissions of toxic air contaminants by adopting more stringent limits and methods for evaluating toxic risks at existing and new facilities.
- **Put a Price on Driving:** Implement pricing measures to reduce travel demand.
- **Advance Electric Vehicles:** Accelerate the widespread adoption of electric vehicles.
- **Promote Clean Fuels:** Promote the use of clean fuels and low or zero carbon technologies in trucks and heavy-duty vehicles.
- **Accelerate Low-Carbon Buildings:** Expand the production of low-carbon, renewable energy by promoting on-site technologies such as rooftop solar and ground-source heat pumps.
- **Support More Energy Choices:** Support of community choice energy programs throughout the Bay Area.
- **Make Buildings More Efficient:** Promote energy efficiency in both new and existing buildings.
- **Make Space and Water Heating Cleaner:** Promote the switch from natural gas to electricity for space and water heating in Bay Area buildings.

When a lead agency contemplates approving a project where an air quality plan consistency determination is required, BAAQMD recommends that the agency analyze the project with respect to the following questions: (1) Does the project support the primary goals of the air quality plan; (2) Does the project include applicable control measures from the air quality plan; and (3) Does the project disrupt or hinder implementation of any control measures from the air quality plan? If the first two questions are concluded in the affirmative and the third question concluded in the negative, the BAAQMD considers the project consistent with the air quality plan prepared for the Bay Area.

## Local Air Quality

The BAAQMD maintains a network of monitoring stations within the Air Basin that monitor air quality and compliance with applicable ambient standards. Two monitoring stations are located near the project sites in San Jose: 158B Jackson Street and 1007 Knox Avenue. The monitoring station at 158 East Jackson Street measures CO, NO<sub>2</sub>, ozone, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>, however, PM<sub>10</sub> monitoring was discontinued in 2022. The monitoring station at 1007 Knox Avenue measures CO, NO<sub>2</sub>, ozone, and PM<sub>2.5</sub>. **Table 1: Air Quality Data Summary (2022 - 2024)** summarizes the most recent three years of data (2022 through 2024)<sup>5</sup> from the BAAQMD's 1007 Knox Avenue monitoring station for CO, NO<sub>2</sub>, and PM<sub>2.5</sub> and 158 East Jackson Street monitoring station for ozone, SO<sub>2</sub>, and PM<sub>10</sub>.

---

<sup>5</sup> As of February of 2026, data from 2025 was not available.

**Table 1: Air Quality Data Summary (2022 - 2024)**

| Pollutant                                                                                        | Monitoring Data by Year |              |             |        |
|--------------------------------------------------------------------------------------------------|-------------------------|--------------|-------------|--------|
|                                                                                                  | Standard <sup>a</sup>   | 2022         | 2023        | 2024   |
| <b>Ozone</b>                                                                                     |                         |              |             |        |
| Highest 1 Hour Average (ppm) <sup>b</sup>                                                        | 0.090/-                 | <b>0.090</b> | 0.087       | 0.040  |
| Highest 8 Hour Average (ppm) <sup>b</sup>                                                        | 0.070                   | <b>0.074</b> | 0.068       | 0.035  |
| <b>Nitrogen Dioxide (NO<sub>2</sub>)</b>                                                         |                         |              |             |        |
| Highest 1 Hour Average (ppm) <sup>b</sup>                                                        | 0.180/0.100             | 0.0508       | 0.0482      | 0.0354 |
| Annual Average (µg/m <sup>3</sup> ) <sup>b</sup>                                                 | 0.030/0.053             | 0.0134       | 0.0113      | 0.0152 |
| <b>Carbon Monoxide (CO)</b>                                                                      |                         |              |             |        |
| Highest 1 Hour Average (ppm) <sup>b</sup>                                                        | 20/35                   | 1.8          | 2.2         | 1.5    |
| Highest 8 Hour Average (ppm) <sup>b</sup>                                                        | 9/9                     | 1.5          | 1.3         | 1.3    |
| <b>Particulate Matter (PM<sub>10</sub>)</b>                                                      |                         |              |             |        |
| Highest 24-Hour Average (µg/m <sup>3</sup> ) <sup>b</sup>                                        | 50/150                  | 44.0         | NA          | NA     |
| State Annual Average (µg/m <sup>3</sup> ) <sup>b</sup>                                           | 20/-                    | <b>20.8</b>  | NA          | NA     |
| <b>Particulate Matter (PM<sub>2.5</sub>)</b>                                                     |                         |              |             |        |
| Highest 24-Hour Average (µg/m <sup>3</sup> ) <sup>b</sup>                                        | -/35                    | 34.7         | <b>46.2</b> | 29.0   |
| State Annual Average (µg/m <sup>3</sup> ) <sup>b</sup>                                           | 12/9                    | 8.74         | 6.50        | 7.38   |
| <b>Sulfur Dioxide (SO<sub>2</sub>)</b>                                                           |                         |              |             |        |
| Highest 1 Hour Average (ppm) <sup>b</sup>                                                        | 0.25/0.75               | 0.002        | 0.036       | 0.005  |
| Highest 3 Hour Average (ppm) <sup>b</sup>                                                        | 0.04/0.14               | 0.0016       | 0.012       | 0.019  |
| NOTES: Values in <b>bold</b> are in excess of at least one applicable standard.                  |                         |              |             |        |
| a. Generally, state standards/national standards are not to be exceeded more than once per year. |                         |              |             |        |
| b. ppm = parts per million; µg/m <sup>3</sup> = micrograms per cubic meter.                      |                         |              |             |        |

Source: United States Environmental Protection Agency, AirData, <https://www.epa.gov/outdoor-air-quality-data/interactive-map-air-quality-monitors>

The state and national 8-hour ozone standards were exceeded in 2022. The annual PM<sub>10</sub> standard was exceeded in 2022. The 24-hour PM<sub>2.5</sub> standard was exceeded in 2023. PM<sub>10</sub> and PM<sub>2.5</sub> concentrations may have been adversely affected by wildfires. No other standards were exceeded during the three-year period.

The Bay Area is currently designated “nonattainment” for state and national (1-hour and 8-hour) ozone standards, for the state PM<sub>10</sub> standards, and for the state and national (annual average and 24-hour) PM<sub>2.5</sub> standards. The Bay Area is designated “attainment” or “unclassifiable” with respect to the other ambient air quality standards.

## Community Air Risk Evaluation

The BAAQMD’s Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor air toxics in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed four percent of the cancer risk-weighted emissions, and benzene contributed three percent. Collectively, five compounds—diesel PM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All these compounds are associated with emissions from internal

combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory accounted for CARB's diesel regulations. Overall, cancer risk from TAC dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for state diesel regulations and other reductions.<sup>6</sup>

Modeled cancer risks from TAC were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. Peak modeled risks were found to be located east of San Francisco, near West Oakland, and the maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

- Western Contra Costa County and the cities of Richmond and San Pablo (west of I-80).
- Western Alameda County along the Interstate 880 corridor and the cities of Berkeley, Alameda, Oakland, and Hayward.
- San Jose.
- Eastern side of San Francisco.
- Concord.
- Vallejo.
- Pittsburgh and Antioch.

The project is within the City of Milpitas which is part of the seven CARE program impacted communities in the Bay Area.<sup>7</sup> The health impacts in the Bay Area, as determined both by pollution levels and by existing health vulnerabilities in a community, are approximately 160 cancer risk per million persons. For the city of San Jose, the health impact is approximately 172 cancer risk per million persons.<sup>8</sup>

## Addressing Sources of Air Pollutants in Community Planning

In May of 2016, the BAAQMD published *Planning Healthy Places: A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning*.<sup>9</sup> The BAAQMD's primary goal in providing the *Guidebook* is to support and promote infill development, which is important to reducing vehicle miles traveled and

---

<sup>6</sup> Bay Area Air Quality Management District, *Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program Retrospective & Path Forward (2004 – 2013)*, April 2014, [http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE\\_Retro\\_spective\\_April2014.ashx?la=en](http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retro_spective_April2014.ashx?la=en)

<sup>7</sup> Community Air Risk Evaluation Program, *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area*, March 2014

<sup>8</sup> Bay Area Air Quality Management District, *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area*, March 2014

<sup>9</sup> Bay Area Air Quality Management District, *Planning Healthy Places: A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning*, May 2016, [https://www.baaqmd.gov/~media/files/planning-and-research/planning-healthy-places/php\\_may20\\_2016-pdf.pdf?la=en](https://www.baaqmd.gov/~media/files/planning-and-research/planning-healthy-places/php_may20_2016-pdf.pdf?la=en)

the associated air emissions, while minimizing air pollution exposure for existing and future residents. The *Guidebook* provides developers and planners with the information and tools needed to create health-protective communities.

The *Guidebook* recommends Best Practices to Reduce Emissions and Reduce Exposure to Local Air Pollution. Implementing as many Best Practices to Reduce Emissions as is feasible will reduce potential health risks to the greatest extent. The *Guidebook* also lists examples of a variety of strategies to reduce exposure to, and emissions of, air pollution, including the adoption of air quality-specific ordinances, standard conditions of approval, and incorporation of policies into general plans and other planning documents. The BAAQMD recommends implementing all best practices to reduce exposure that are feasible and applicable to a project in areas that are likely to experience elevated levels of air pollution. To reduce exposure to pollutants, the *Guidebook* recommends practices like installing indoor air filtration systems, planting dense vegetation, implementing project design which provides a buffer between sensitive receptors and emission source, and developing alternative truck routes.

The *Guidebook* provides an interactive map of the Bay Area showing areas with estimated elevated levels of fine particulates and/or toxic air contaminants. The interactive map shows locations where further study is needed, such as a detailed health risk assessment; specifically, locations next to major roads and freeways and large industrial sites, as well as the downtown districts of cities.

### **Nearby Sensitive Receptors**

Land uses such as schools, children's daycare centers, hospitals, and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. The CARB has identified the following people as most likely to be affected by air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and those with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive population groups.

Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas, because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational uses are also considered sensitive, due to the greater exposure to ambient air quality conditions and because the presence of pollution detracts from the recreational experience. According to the BAAQMD, workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupation Safety and Health Administration to ensure the health and well-being of their employees.

The project site is in a suburban residential neighborhood. Nearby uses include single-family residences to the east, north, and west, open space to the west, and recreational uses to the west. The project site is within approximately 50 feet of nearby residences east of the project site, approximately 70 feet of nearby residences to the north, and approximately 150 feet of nearby residences to the west. Peter Gill Memorial Park is located approximately 200 feet to the west of the levee; within the southern portion of the proposed project.

According to the requirements under the California Public Resources Code, Division 13, Environmental Quality (§21000 – §21189.57), a project located within ¼ mile of a school that involve the construction or alteration of a facility that might reasonably be anticipated to emit hazardous air emissions, and that may impose a health or safety hazard to persons who would attend or would be employed at the school, must meet all requirements per CEQA Guidelines §15186 (b)(1)(2).<sup>10</sup> The lead agency must consult with the affected school district or districts regarding the potential impact of the project on the school and notify the affected school district(s) of the project in writing, not less than 30 days prior to approval or certification of the negative declaration or environmental impact report. There are no schools within ¼ mile of the project sites.

## City of Milpitas 2040 General Plan

The *City of Milpitas 2040 General Plan* (General Plan) is a planning document that defines a long-term vision for the city over the next 20 years. The City of Milpitas updated and adopted its current *General Plan* in March 2021.<sup>11</sup> Applicable goals and policies related to air quality from the *General Plan* are the following:

**Goal:** Implement a proactive approach to maintain and improve air quality within Milpitas and the region.

**Policy:** Ensure that land use and transportation plans support air quality goals through a logical development pattern that focuses growth in and around existing urbanized areas, locates new housing near places of employment, encourages alternative modes of transportation, supports efficient parking strategies, reduces vehicle miles traveled, and requires projects to mitigate significant air quality impacts.

**Policy:** Minimize exposure of the public to toxic or harmful air emissions and odors through requiring an adequate buffer or setback distance between residential and other sensitive land uses and land uses that typically generate air pollutants, toxic air contaminants, or obnoxious fumes or odors, including but not limited to industrial, manufacturing, and processing facilities, high-volume roadways, and industrial rail lines. New sensitive receptors, such as residences (including residential care and assisted living facilities for the elderly), childcare centers, schools, playgrounds, churches, and medical facilities shall be located away from existing point sources of air pollution such that excessive levels of exposure do not result in unacceptable health risks. Compliance shall be verified through the preparation of a health risk assessment when deemed necessary by the Planning Director.

**Policy:** Require projects which generate high levels of air pollutants, such as heavy industrial, manufacturing facilities and hazardous waste handling operations, to incorporate air quality mitigations in their design to reduce impacts to the greatest extent feasible.

**Policy:** Require projects to adhere to the requirements of the BAAQMD.

**Policy:** Use the City's development review process and the CEQA to evaluate and mitigate the local and cumulative effects of new development on air quality.

---

<sup>10</sup> 2019 CEQA Statutes and Guidelines, [http://resources.ca.gov/ceqa/docs/2019\\_CEQA\\_Statutes\\_and\\_Guidelines.pdf](http://resources.ca.gov/ceqa/docs/2019_CEQA_Statutes_and_Guidelines.pdf)

<sup>11</sup> Milpitas 2040 General Plan, March 9, 2021, <https://www.milpitas.gov/370/Milpitas-2040-General-Plan>

**Policy:** Coordinate with CARB and the BAAQMD to properly measure air quality emission sources and enforce the standards of the Clean Air Act.

**Policy:** Comply with regional, state, and federal standards and programs for control of all airborne pollutants and noxious odors, regardless of source.

**Policy:** Consider the health risks associated with TAC when reviewing development applications.

**Policy:** Coordinate with Santa Clara County and nearby cities to implement regional GHG reduction plans and to consolidate efforts to reduce GHG throughout the county as appropriate.

**Policy:** Implement policies and action from the Land Use and Circulation Elements to provide mixed-use developments, locate high-density uses near transit facilities, provide neighborhood-serving retail uses convenient to residential neighborhoods, and other Transportation Demand Management programs that would reduce vehicle trips and vehicle miles traveled, thus reducing air-pollutant emissions.

**Policy:** Encourage improvements and design features that reduce vehicle delays such as bus turnouts, and synchronized traffic signals for new development to reduce excessive vehicle emissions caused by idling.

**Policy:** Encourage and prioritize infrastructure investments and improvements that promote safe walking, bicycling and increased transit ridership.

**Policy:** Implement energy policies and actions that have co-benefits of reduced air pollution and GHG by increasing energy efficiency, conservation, and the use of renewable resources.

## 5.0 THRESHOLDS OF SIGNIFICANCE

The significance of potential impacts was determined based on State CEQA Guidelines, Appendix G, and the BAAQMD *CEQA Air Quality Guidelines*. Using Appendix G evaluation thresholds, a project would be considered to have significant air quality impacts if it were to:

- A. Conflict with or obstruct implementation of the applicable air quality plan;
- B. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
- C. Expose sensitive receptors to substantial pollutant concentrations; or
- D. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The thresholds and methodologies from the BAAQMD's *CEQA Air Quality Guidelines* were used to evaluate the potential impacts of construction. The applicable thresholds of significance applied to assess project-level air quality impacts are:

- Average daily construction exhaust emissions of 54 pounds per day of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> or 82 pounds per day of PM<sub>10</sub>;
- Average daily operation emissions of 54 pounds per day of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> or 82 pounds per day of PM<sub>10</sub>; or result in maximum annual emissions of 10 tons per year of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> or 15 tons per year of PM<sub>10</sub>; or

- Frequently and for a substantial duration, create or expose sensitive receptors to substantial objectionable odors affecting a substantial number of people.

The BAAQMD air quality significance thresholds are found in **Table 2: BAAQMD Air Quality Significance Thresholds**.

**Table 2: BAAQMD Air Quality Significance Thresholds**

| Pollutant                                    | Construction<br>Thresholds | Daily Operational<br>Thresholds        | Annual Operational<br>Thresholds |
|----------------------------------------------|----------------------------|----------------------------------------|----------------------------------|
| Criteria Air Pollutants                      |                            |                                        |                                  |
| ROG                                          | 54                         | 54                                     | 10                               |
| NOx                                          | 54                         | 54                                     | 10                               |
| PM <sub>10</sub>                             | 82<br>(exhaust only)       | 82                                     | 15                               |
| PM <sub>2.5</sub>                            | 54<br>(exhaust only)       | 54                                     | 10                               |
| CO                                           | NA                         | 9.0 ppm (8-hour) and 20.0 ppm (1-hour) |                                  |
| Fugitive Dust                                | Best Management Practices  | NA                                     |                                  |
| Project Health Risk and Hazards              |                            |                                        |                                  |
| Excess Cancer Risk                           | 10 per million             |                                        |                                  |
| Chronic Hazard Index                         | 1.0                        |                                        |                                  |
| Acute Hazard Index                           | 1.0                        |                                        |                                  |
| Incremental Annual Average PM <sub>2.5</sub> | 0.3 µg/m <sup>3</sup>      |                                        |                                  |
| Cumulative Health Risk and Hazards           |                            |                                        |                                  |
| Excess Cancer Risk                           | 100 per million            |                                        |                                  |
| Chronic Hazard Index                         | 10.0                       |                                        |                                  |
| Acute Hazard Index                           | 10.0                       |                                        |                                  |
| Incremental Annual Average PM <sub>2.5</sub> | 0.8 µg/m <sup>3</sup>      |                                        |                                  |

SOURCE: BAAQMD Adopted Air Quality CEQA Thresholds of Significance – April 2023, [https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-3-thresholds\\_final\\_v2-pdf.pdf?rev=a976830cce0c4a6bb624b020f72d25b3&sc\\_lang=en](https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-3-thresholds_final_v2-pdf.pdf?rev=a976830cce0c4a6bb624b020f72d25b3&sc_lang=en)

## 6.0 EMISSIONS INVENTORY

Intermittent (short-term construction emissions that occur from activities, such as grading were evaluated. The analysis focuses on daily emissions from construction activities. CalEEMod was used to quantify construction-related emissions. CalEEMod output worksheets are included in **Attachment A: Construction Emissions Inventory Supporting Information**. The emissions generated from these construction activities include:

- Dust (including PM<sub>10</sub> and PM<sub>2.5</sub>) primarily from “fugitive” sources (i.e., emissions released through means other than through a stack or tailpipe) such as material handling and travel on unpaved surfaces; and



- Combustion exhaust emissions of criteria air pollutants (ROG, NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub>) primarily from off-road construction equipment, haul trucks, (primarily diesel-operated), and construction worker automobile trips (primarily gasoline-operated).
- VOC as ROG primarily from “fugitive” sources such as architectural coating and paving.

Fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. High winds (greater than 10 miles per hour) occur infrequently in the area, less than two percent of the time. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM<sub>10</sub> concentrations may be adversely affected on a temporary and intermittent basis during construction. In addition, the fugitive dust generated by construction would include not only PM<sub>10</sub>, but also larger particles, which would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts.

Construction activities would be conducted from 7 a.m. to 7 p.m. Monday through Friday. Onsite generators (one primary and one backup) would operate 24 hours per day, seven days per week for the duration of the project. Project construction is anticipated to begin early June of 2027 and be completed in October of 2027 (a total of 120 construction days). **Table 3: Construction Schedule** provides the construction schedule by construction activity.

An estimated 13,250 cubic yards of levee fill materials and 2,600 cubic yards of boulders would be imported to the project site and 13,900 cubic yards of materials would be exported offsite. Project construction would result in a total of 0.37 acres of ground disturbance at the project site. Approximately 30 haul truck trips would be required.

**Table 3: Construction Schedule**

| Construction Activity  | Start      | End        | Working Days |
|------------------------|------------|------------|--------------|
| Temporary Access       | 06/15/2027 | 06/18/2027 | 4            |
| Grading and Excavation | 06/21/2027 | 10/01/2027 | 75           |
| Bank Stabilization     | 06/21/2027 | 10/01/2027 | 75           |
| Finished Grading       | 10/04/2027 | 10/15/2027 | 10           |

The estimated construction equipment associated with the proposed project along with the number of pieces of equipment, daily hours of operation, horsepower (hp), and load factor (i.e., percent of full throttle) are shown in **Table 4: Estimated Construction Equipment Usage**.

The dewatering system set up would comprise cofferdams, two 50 hp generators (one primary and one backup), and 6-inch-to-10-inch sump pumps with approximately 700 feet of bypass pipes and hoses. Earthen cofferdams would be installed upstream and downstream of the project site, with pipes running through and under the temporary construction ramp and discharging flows downstream of the project site. Generators would be placed along the top of the levee banks.

**Table 4: Estimated Construction Equipment Usage**

| Construction Activity  | Equipment           | Amount | Daily Hours | HP  |
|------------------------|---------------------|--------|-------------|-----|
| Temporary Access       | Excavator           | 1      | 8           | 38  |
| Temporary Access       | Loader              | 1      | 8           | 84  |
| Temporary Access       | Sheepsfoot          | 1      | 8           | 36  |
| Temporary Access       | Skid Steer          | 1      | 8           | 71  |
| Temporary Access       | Dump Trucks         | 2      | 8           | 376 |
| Temporary Access       | Water Truck/Sweeper | 2      | 8           | 376 |
| Temporary Access       | Generators          | 2      | 24          | 50  |
| Grading and Excavation | Excavator           | 2      | 8           | 38  |
| Grading and Excavation | Loader              | 1      | 8           | 84  |
| Grading and Excavation | Sheepsfoot          | 1      | 8           | 36  |
| Grading and Excavation | Skid Steer          | 1      | 8           | 71  |
| Grading and Excavation | Dump Trucks         | 10     | 8           | 376 |
| Grading and Excavation | Water Truck/Sweeper | 2      | 8           | 376 |
| Grading and Excavation | Generators          | 2      | 24          | 50  |
| Bank Stabilization     | Excavator           | 2      | 8           | 38  |
| Bank Stabilization     | Loader              | 1      | 8           | 84  |
| Bank Stabilization     | Sheepsfoot          | 1      | 8           | 36  |
| Bank Stabilization     | Skid Steer          | 1      | 8           | 71  |
| Bank Stabilization     | Dump Trucks         | 10     | 8           | 376 |
| Bank Stabilization     | Water Truck/Sweeper | 2      | 8           | 376 |
| Bank Stabilization     | Generators          | 2      | 24          | 50  |
| Finished Grading       | Excavator           | 2      | 8           | 38  |
| Finished Grading       | Loader              | 1      | 8           | 84  |
| Finished Grading       | Sheepsfoot          | 1      | 8           | 36  |
| Finished Grading       | Skid Steer          | 1      | 8           | 71  |
| Finished Grading       | Dump Trucks         | 10     | 8           | 376 |
| Finished Grading       | Water Truck/Sweeper | 2      | 8           | 376 |
| Finished Grading       | Generators          | 2      | 24          | 50  |

Note: Additionally, five construction worker vehicle trips and the use of two pickup trucks onsite will occur during each construction phase. This equipment list provided is an estimate based on current project planning and requirements. Actual equipment usage may vary depending on on-site conditions, project needs, and any adjustments to the project schedule.

Per BAAQMD's *CEQA Air Quality Guidelines*, the reported PM<sub>10</sub> and PM<sub>2.5</sub> emissions are related to combustion exhaust only. Fugitive dust emissions are addressed via **Best Management Practice AQ-1** and **Mitigation Measure AQ-1** per BAAQMD *CEQA Air Quality Guidelines* (Table 5-2) and **Best Management Practice AQ-2**. Combustion exhaust emissions are addressed via **Mitigation Measure AQ-2**. Additionally, the project would implement **Mitigation Measure GHG-1** and **Mitigation Measure GHG-2**.

**Table 5: Estimated Average Daily Construction Emissions** provides the estimated short-term unmitigated construction emissions that would be associated with the project and compares those emissions to the BAAQMD's significance thresholds for construction exhaust emissions. The average daily construction period emissions (i.e., total construction period emissions divided by the number of actual construction

days) were compared to the BAAQMD significance thresholds. Construction-related emissions of NOx would be above the BAAQMD significance thresholds without mitigation. With **Mitigation Measure AQ-2**, all construction-related emissions would be below the BAAQMD significance thresholds. Note that mitigated CO emissions are greater than the unmitigated CO emissions due to control technologies that are focused on reducing ROG, NOx, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions, which have a reverse effect on CO emissions.

Using standard fuel consumption estimates, construction activities would require approximately 139,290 gallons of diesel fuel (haul trucks and offroad equipment) and approximately 330 gallons of gasoline (worker vehicles).<sup>12</sup>

**Table 5: Estimated Average Daily Emissions (pounds)**

| Project                                      | ROG         | NOx         | PM <sub>10</sub> | PM <sub>2.5</sub> | CO         | SO <sub>2</sub> |
|----------------------------------------------|-------------|-------------|------------------|-------------------|------------|-----------------|
| <b>Average Daily Emissions (Unmitigated)</b> | <b>12.3</b> | <b>82.6</b> | <b>2.42</b>      | <b>2.23</b>       | <b>106</b> | <b>0.37</b>     |
| Significance Threshold                       | 54          | 54          | 82               | 54                | ---        | ---             |
| Significant (Yes or No)?                     | No          | Yes         | No               | No                | No         | No              |
| <b>Average Daily Emissions (Mitigated)</b>   | <b>3.83</b> | <b>44.8</b> | <b>0.71</b>      | <b>0.71</b>       | <b>189</b> | <b>0.31</b>     |
| Significance Threshold                       | 54          | 54          | 82               | 54                | ---        | ---             |
| Significant (Yes or No)?                     | No          | No          | No               | No                | No         | No              |

SOURCE: CARB CalEEMod

#### **Best Management Practice AQ-1: BAAQMD Dust Control Measures**

The following BAAQMD Dust Control Measures will be implemented (per BAAQMD *CEQA Air Quality Guidelines*, Table 5-2 and Valley Water BMPs):

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- Water used to wash the various exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, etc.) will not be allowed to enter waterways.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations), and this requirement shall be

<sup>12</sup> Fuel usage is estimated using the CalEEMod output for CO<sub>2</sub> and a 8.78 kgCO<sub>2</sub>/gallon (gasoline) and a 10.19 kgCO<sub>2</sub>/gallon (diesel) conversion factor, [https://www.eia.gov/environment/emissions/co2\\_vol\\_mass.php](https://www.eia.gov/environment/emissions/co2_vol_mass.php)

clearly communicated to construction workers (such as verbiage in contracts and clear signage at all access points).

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications, and all equipment shall be checked by a certified visible emissions evaluator.
- Correct tire inflation shall be maintained in accordance with manufacturer's specifications on wheeled equipment and vehicles to prevent excessive rolling resistance.
- Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

#### **Mitigation Measure AQ-1: Additional BAAQMD Dust Control Measures**

The following additional BAAQMD Dust Control Measures will be implemented (per BAAQMD *CEQA Air Quality Guidelines*, Table 5-2):

- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.

#### **Mitigation Measure AQ-2: Additional Combustion Exhaust Control Measures**

Valley Water shall implement the following measures during construction to further reduce construction exhaust emissions:

All construction equipment larger than 25 horsepower used at the site for more than two continuous days or 20 hours total shall utilize diesel engines that are USEPA certified "Tier 4 Final" emission standards for particulate matter and be equipped with CARB-certified Level 3 Diesel Particulate Filters. Prior to the issuance of any demolition/construction permits, the construction contractor shall submit specifications of the equipment to be used during construction and Valley Water shall confirm this requirement is met.<sup>13</sup>

Equipment such as air compressors, concrete/industrial saws, forklifts, light stands, manlifts, pumps, and welders shall be electric or alternative-fueled (i.e., non-diesel), where feasible. Pole power shall be utilized at the earliest feasible point in time and shall be used to the maximum extent feasible in

---

<sup>13</sup>USEPA and CARB have implemented regulations and a tiering system to reduce emissions from off-road equipment with increasing combustion efficiency (i.e., decreasing emissions) where Tier 1 is the least efficient (greatest emissions) and Tier 4 is the most efficient (least emissions). The regulations have been implemented over time such that Tier 1 was phased out in the 1990's and Tier 2 was required, followed by implementation of Tier 3 and Tier 4 by 2015 with a phase out of Tier 2.

lieu of generators. If stationary construction equipment, such as diesel-powered generators, must be operated continuously, such equipment must be Tier 4 Final construction equipment or better and located at least 100 feet from air quality sensitive land uses (e.g., residences, schools, childcare centers, hospitals, parks, or similar uses), whenever possible.

At a minimum, require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year trucks (e.g., material delivery trucks and soil import/export with a gross vehicle weight rating of at least 14,001 pounds), that meet CARB's 2010 engine emissions standards or newer, cleaner trucks.

#### **Best Management Practice AQ-2: Valley Water Stream Maintenance Program Update BMPs**

Consistent with the Valley Water Stream Maintenance Program Update<sup>14</sup>, the following BMPs would also be implemented to control dust emissions and equipment exhaust emissions during the proposed project:

- **BMP GEN-4: Minimize the Area of Disturbance** will ensure that the footprint of work area, staging areas, and access routes are kept to the minimum area necessary to complete maintenance work to minimize the amount of fugitive dust and therefore reduce the amount of PM<sub>10</sub> emissions.
- **BMP GEN-24: Work Site Housekeeping** will ensure that the work site is kept in a clean, neat, and orderly condition to minimize the amount of fugitive dust.
- **BMP GEN-26: Staging and Stockpiling of Materials** incorporates measures to keep spoils and chemicals in designated areas which will help to minimize fugitive dust and emissions from entering sensitive areas.
- **BMP GEN-36: Dust Management** will ensure that the BAAQMD's Basic Dust Control Measures are implemented.
- **BMP GEN-37: Vehicle and Equipment Maintenance** will ensure that vehicles and equipment are properly maintained so that criteria air pollutant emissions are reduced.
- **BMP GEN-42: Pump/Generator Operations and Maintenance** will ensure that pumps and generators will be sufficiently maintained and operated so that emissions are minimized. Generators will be stored and operated with secondary containment. Implementation of these measures will reduce the amount of exposure of exhaust emissions from the operation and maintenance of pumps and generators during channel dewatering.

#### **Regulatory Requirements:**

Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.

---

<sup>14</sup> Santa Clara Valley Water, Stream Maintenance Program Update Draft Subsequent Environmental Impact Report, July 2025, <https://www.valleywater.org/project-updates/stream-maintenance-program>

All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

The project shall require construction contractors to recycle or salvage a minimum of 65 percent of the non-hazardous construction and demolition waste generated directly from construction and demolition of the project per CalGreen Construction Waste Management Requirements.

In addition, for construction projects, regulatory requirements may include, but are not limited to, BAAQMD's Regulation 6, Rule 1 (General Requirements) and Regulation 6, Rule 6 (Prohibition of Trackout) which require dust generating operations to limit particulate matter emissions. Rule 6-1 prohibits fugitive emissions on site and BAAQMD enforcement staff are trained to document visible emissions and fugitive dust using either the opacity or the Ringlemann test methods. For construction sites, Rule 6-1 does not prescribe mitigation measures, however operators are expected to utilize standard construction management practices to comply with the fugitive dust emissions prohibition. Rule 6-6 prohibits trackout. For construction sites, Rule 6-6 does not prescribe mitigation measures, however construction operators are expected to use common operational measures and suppression techniques (i.e., trackout control devices) to minimize trackout.

## 7.0 HEALTH IMPACTS

OEHHA specifies that due to the uncertainty in assessing cancer risk from very short-term exposures, it does not recommend assessing cancer risk for projects lasting less than two months. OEHHA recommends that exposure from projects longer than two months, but less than six months be assumed to last six months while exposure from projects lasting more than six months should be evaluated for the duration of the project.

The project site is in a suburban residential neighborhood. Nearby uses include single-family residences to the east, north, and west, open space to the west, and recreational uses to the west. The project site is within approximately 50 feet of nearby residences east of the project site, approximately 70 feet of nearby residences to the north, and approximately 150 feet of nearby residences to the west. Peter Gill Memorial Park is located approximately 200 feet to the west of the levee; within the southern portion of the proposed project.

The project involves construction activities that would occur along the levee for approximately 120 working days. However, construction would not occur in any one location for more than 20 days. Project generators (one primary and one backup) would operate 24 hours per day, seven days per week during the construction activities. The generators would be placed at the top of the left bank (westside), looking downstream, as far from residential areas as possible. Therefore, a formal health risk assessment was not conducted.

Fugitive dust emissions are addressed via **Best Management Practice AQ-1** and **Mitigation Measure AQ-1** per BAAQMD *CEQA Air Quality Guidelines* (Table 5-2) and **Best Management Practice AQ-2**. Combustion exhaust emissions are addressed via **Mitigation Measure AQ-2**. Additionally, the project would implement **Mitigation Measure GHG-1** and **Mitigation Measure GHG-2**.

Based on information from San Francisco Planning Department<sup>15</sup> and the California Air Resources Board<sup>16</sup>, The projected availability in 2026 (based on the trend from 2020 to 2023), it is expected that 75 percent of construction equipment (a total of 23,594 pieces of equipment) within the Bay Area would be Tier 4 or electric.<sup>17</sup> This corresponds to a strong availability of Tier 4 Final (or electric) equipment in the Bay Area especially given the small number of pieces of equipment needed for the project. CARB data for 2020 shows that approximately 42.2 percent of the construction equipment within California are Tier 4 Final; this equates to 60,771 pieces of construction equipment.<sup>18</sup> Therefore, there would be no issues with the availability of Tier 4 Final and electric construction equipment for the proposed project and the use of Tier 4 Final and electric construction equipment would minimize the health impacts.

## 8.0 ODOR IMPACTS

Though offensive odors from stationary and mobile sources rarely cause any physical harm, they remain unpleasant and can lead to public distress, generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors. Generally, odor emissions are highly dispersive, especially in areas with higher average wind speeds. However, odors disperse less quickly during inversions or during calm conditions, which hamper vertical mixing and dispersion.

The BAAQMD's significance criteria for odors are subjective and are based on the number of odor complaints generated by a project. Generally, the BAAQMD considers any project with the potential to frequently expose members of the public to objectionable odors to cause a significant impact. With respect to the project, diesel-fueled construction equipment exhaust would generate some odors. However, these emissions typically dissipate quickly and would be unlikely to affect a substantial number of people. The project would not involve activities that generate substantial odors.

### Best Management Practice AQ-3: Avoiding Stockpile Odors

Materials with decaying organic material, or other potentially odorous materials, shall be handled in a manner that avoids impacting residential areas and other sensitive receptors, including the following:

- Avoid stockpiling potentially odorous materials within 1,000 feet of residential areas or other odor sensitive land uses.

---

<sup>15</sup> San Francisco Planning Department, *Off-Road Construction Equipment Vehicle Inventory*, October 2023, <https://sfplanning.org/air-quality>

<sup>16</sup> California Air Resources Board, *2022 CARB Construction, Industrial, Mining and Oil Drilling Emissions Inventory*, August 2022, <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022InUseDieselInventory.pdf>

<sup>17</sup> USEPA and CARB have implemented regulations and a tiering system to reduce emissions from off-road equipment with increasing combustion efficiency (i.e., decreasing emissions) where Tier 1 is the least efficient (greatest emissions) and Tier 4 is the most efficient (least emissions). The regulations have been implemented over time such that Tier 1 was phased out in the 1990's and Tier 2 was required, followed by implementation of Tier 3 and Tier 4 by 2015 with a phase out of Tier 2.

<sup>18</sup> California Air Resources Board, *2022 CARB Construction, Industrial, Mining and Oil Drilling Emissions Inventory*, August 2022, <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022InUseDieselInventory.pdf>

- Odorous stockpiles disposed of at an appropriate landfill.

Therefore, odor impacts associated with the project would be less than significant.

## **9.0 CUMULATIVE IMPACTS**

Cumulative impacts are defined in CEQA as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines Section 15355). Stated in another way, “a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts” (CEQA Guidelines Section 15130 [a][1]).

Cumulative impacts would exist when either direct air quality impacts or multiple construction projects occur within the same area simultaneously. If a project were to produce air quality emissions simultaneously to a nearby construction project, the addition of both project emissions to the environment could exceed significance thresholds. For this project, the construction emissions were found to be less than significant. If a nearby project was to be under construction at the same time, that project would need to produce an additive amount of emissions close to the project site such that emissions would exceed thresholds. Therefore, a less than significant cumulative air quality impact would be expected during the construction activities.

## **10.0 GREENHOUSE GAS EMISSIONS**

“Global warming” and “global climate change” are the terms used to describe the increase in the average temperature of the earth’s near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal, with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. Continued warming is projected to increase global average temperature between 2 and 11°F over the next 100 years.

Natural processes and human actions have been identified as the causes of this warming. The Intergovernmental Panel on Climate Change (IPCC) concludes that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. After 1950, however, increasing GHG concentrations resulting from human activity such as fossil fuel burning, and deforestation have been responsible for most of the observed temperature increase. These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion.

Increases in GHG concentrations in the earth’s atmosphere are thought to be the main cause of human-induced climate change. GHG naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Some GHG occurs naturally and are necessary for keeping the earth’s surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.



Gases that trap heat in the atmosphere are referred to as GHG because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHG has been implicated as the driving force for global climate change. The primary GHG are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), ozone, and water vapor.

While the presence of the primary GHG in the atmosphere are naturally occurring, CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O are also emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Emissions of CO<sub>2</sub> are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHG include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes.

CO<sub>2</sub> is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO<sub>2</sub>. CH<sub>4</sub> and N<sub>2</sub>O are substantially more potent GHG than CO<sub>2</sub>, with GWP of 25 and 298 times that of CO<sub>2</sub>, respectively.<sup>19</sup>

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons (MT) of CO<sub>2</sub> equivalents (CO<sub>2</sub>e). CO<sub>2</sub>e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH<sub>4</sub> and N<sub>2</sub>O have much higher GWP than CO<sub>2</sub>, CO<sub>2</sub> is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO<sub>2</sub>e.

Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO<sub>2</sub> emissions (and thus substantial increases in atmospheric concentrations of CO<sub>2</sub>). In pre-industrial times (c. 1860), concentrations of atmospheric CO<sub>2</sub> were approximately 280 parts per million (ppm). By December 2025, atmospheric CO<sub>2</sub> concentrations had increased to 427.5 ppm, 55 percent above pre-industrial concentrations.<sup>20</sup>

There is international scientific consensus that human-caused increases in GHG have and will continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.<sup>21</sup>

---

<sup>19</sup> Global Warming Potential values, [https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29\\_1.pdf](https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf)

<sup>20</sup> Earth System Research Laboratory, *Recent Monthly Mean CO<sub>2</sub> at Mauna Lora*, [www.esrl.noaa.gov/gmd/ccgg/trends/](http://www.esrl.noaa.gov/gmd/ccgg/trends/)

<sup>21</sup> California Environmental Protection Agency, *2006 Final Climate Action Team Report to the Governor and Legislature*, March 2006, [https://planning.lacity.org/eir/8150Sunset/References/4.E.%20Greenhouse%20Gas%20Emissions/GHG.23\\_CalEPA%202006%20Report%20to%20Governor.pdf](https://planning.lacity.org/eir/8150Sunset/References/4.E.%20Greenhouse%20Gas%20Emissions/GHG.23_CalEPA%202006%20Report%20to%20Governor.pdf)

## **California Environmental Quality Act and Climate Change**

Under CEQA, lead agencies are required to disclose the reasonably foreseeable adverse environmental effects of projects they are considering for approval. GHG emissions have the potential to affect the environment because they contribute to global climate change. In turn, global climate change has the potential to cause sea level rise, alter rainfall and snowfall patterns, and affect habitat.

## **California Code of Regulations Title 24**

Although not originally intended to reduce greenhouse gas emissions, Title 24 of the California Code of Regulations, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow for the consideration and possible incorporation of new energy efficiency technologies and methods. Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. Therefore, increased energy efficiency results in decreased GHG emissions.

Accordingly, Title 24 in the CALGreen Building Code is now a part of the statewide strategy for reducing GHG emissions and is the only statewide plan for reduction of GHG emissions that every local agency must adopt in a public hearing by adopting the state building code. Consistent with CALGreen, the state recognized that GHG reductions would be achieved through buildings that exceed minimum energy-efficiency standards, decrease consumption of potable water, reduce solid waste during construction, and incorporate sustainable materials. Compliance with Title 24 of the CALGreen Building Code is thus a vehicle to achieve statewide electricity and natural gas efficiency targets, and lower GHG emissions from waste and water transport sectors.

## **Pavley Standards**

California AB 1493 (Pavley) enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks for model years 2009–2016, which are often times referred to as the “Pavley I” standards. The CARB obtained a waiver from the USEPA that allows for implementation of these regulations notwithstanding possible federal preemption concerns.

## **Executive Order S-3-05**

Governor Schwarzenegger established Executive Order S-3-05 in 2005, in recognition of California's vulnerability to the effects of climate change. Executive Order S-3-05 set forth a series of target dates by which statewide emissions of GHG would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the Secretary of CalEPA to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the governor and

California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of CalEPA created the California Climate Action Team, made up of members from various state agencies and commissions. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through state incentive and regulatory programs.

### **Assembly Bill 32 (California Global Warming Solutions Act of 2006)**

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction was to be accomplished by enforcing a statewide cap on GHG emissions that were to be phased in starting in 2012. To effectively implement the cap, AB 32 directed CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specified that regulations adopted in response to AB 1493 were used to address GHG emissions from vehicles. However, AB 32 also included language stating that if the AB 1493 regulations cannot be implemented, then CARB was to develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 required CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Pursuant to AB 32, CARB identified 427 million MT CO<sub>2</sub>e as the total Statewide aggregated 1990 GHG emissions level, which serves as the 2020 emissions limit. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 represented an approximate 25 to 30 percent reduction in current emissions levels. However, CARB also had discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. The goals of AB 32 were achieved within the 2002 timeline.

### **Climate Change Scoping Plans**

AB 32 also required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHG to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by CARB in 2008 and must be updated every five years. The initial AB 32 Scoping Plan contains the main strategies California will use to reduce the GHG that cause climate change. The initial Scoping Plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation fee regulation to fund the program. In August 2011, the initial Scoping Plan was approved by CARB.

The 2013 Scoping Plan Update builds upon the initial Scoping Plan with new strategies and recommendations. The 2013 Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The 2013 Update defines CARB climate change priorities for the next five years and sets the groundwork to reach California's long-term climate goals set forth in Executive Orders S-3-05 and B-16-2012. The 2013 Update highlights California progress toward meeting the near-term 2020 GHG emission reduction goals defined in the initial Scoping Plan. In the 2013 Update, nine key focus areas were identified (energy, transportation, agriculture, water, waste management, and natural and working lands), along with short-lived climate pollutants, green buildings, and the cap-and-trade program.

On May 22, 2014, the First Update to the Climate Change Scoping Plan was approved by CARB, along with the finalized environmental documents. The First Update to the Climate Change Scoping Plan identified the 2020 emissions limit as 431 million metric tons of CO<sub>2</sub>e and the 2020 business-as-usual forecast as 509 million metric tons of CO<sub>2</sub>e. Finally, the Updated Scoping Plan provided recommendations for establishing a mid-term emissions limit that aligns with the long-term (2050) goals of Executive Order S-3-05. The recommendations covered energy, transportation, agriculture, water, waste management, natural and working lands, short-lived climate pollutants, green building, and cap-and-trade sectors.

In 2017, CARB approved the Second Update to the Climate Change Scoping Plan (2017 Scoping Plan). The 2017 Scoping Plan identified progress made to meet the near-term (2020) objectives of AB 32 and defined California's climate change priorities and activities for the next several years. The 2017 Scoping Plan identified the 2020 emissions limit as 431 million metric tons of CO<sub>2</sub>e and the 2020 business-as-usual forecast as 509 million metric tons of CO<sub>2</sub>e. The 2017 Scoping Plan provided strategies for meeting the mid-term 2030 greenhouse gas reduction target set by Senate Bill (SB) 32. The 2017 Scoping Plan also identified how the State can substantially advance toward the 2050 greenhouse gas reduction target of Executive Order S-3-05, which consists of reducing greenhouse gas emissions to 80 percent below 1990 levels. The recommendations covered the key sectors, including energy and industry; transportation; natural and working lands; waste management; and water.

In 2022, CARB approved the Third Update to the Climate Change Scoping Plan (2022 Scoping Plan), which lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by Assembly Bill 1279.<sup>22</sup> The 2022 Scoping Plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 80 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.

---

<sup>22</sup> California Air Resources Board, *Final 2022 Scoping Plan Update*, November 16, 2022, <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan#:~:text=The%20Draft%202022%20Scoping%20Plan,neutrality%20no%20later%20than%202045>

- Focuses on strategies for reducing California’s dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California’s most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands to the state’s GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

The recommended measures in the 2022 Scoping Plan and previous Scoping Plans are broad policy and regulatory initiatives that will be implemented at the State level and do not relate to the construction of individual projects.

### **Federal Vehicle Standards**

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the USEPA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014 through 2018. The standards for CO<sub>2</sub> emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the USEPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.

In August 2016, the USEPA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO<sub>2</sub> emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program. On September 27, 2019, the USEPA and the NHTSA published the “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program.” (84 Fed. Reg. 51,310 (Sept. 27, 2019.)) The Part One Rule revokes California’s authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. On March 31, 2020, the USEPA finalized rulemaking for SAFE Part Two, which sets CO<sub>2</sub> emissions standards and corporate average fuel economy standards for passenger vehicles and light duty trucks, covering model years 2021 through 2026.

### **Bay Area Air Quality Management District**

The BAAQMD is the regional agency with jurisdiction over the nine-county region located in the Basin. The Association of Bay Area Governments (ABAG), Metropolitan Transportation Commission (MTC),

county transportation agencies, cities and counties, and various non-governmental organizations also join of regulations and policies, as well as implementation of extensive education and public outreach programs.

Under CEQA, the BAAQMD is a commenting responsible agency for air quality within its jurisdiction or impacting its jurisdiction. The BAAQMD reviews projects to ensure that they would: (1) support the primary goals of the latest Air Quality Plan; (2) include applicable control measures from the Air Quality Plan; and (3) not disrupt or hinder implementation of any Air Quality Plan control measures.

On April 20, 2022, the BAAQMD Board of Directors adopted the *CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans* (Guidance). In its Guidance, the District recommends thresholds for determining whether a proposed project will have a significant impact on climate change. Under the Guidance, the BAAQMD establishes that if a project would contribute its “fair share” of what will be required to achieve the long-term climate goals in California, then a reviewing agency can find that the impact will not be significant because the project will help to solve the problem of global climate change.

### **City of Milpitas Climate Action Plan**

The City of Milpitas developed a Climate Action Plan (CAP) to serve as a comprehensive roadmap to continue addressing the challenges of climate change. The objectives of the CAP are: (1) to reduce GHG emissions from local activities to achieve GHG reduction targets and (2) to build community resilience to prepare for and adapt to the impacts of climate change. The CAP establishes locally based strategies, measures, and actions that will serve to achieve these objectives and simultaneously enhance the quality of life for residents, workers, and visitors of the city. The CAP is consistent with and complementary to State climate legislation and regulatory mandates and aligns with the State’s and the region’s approach to addressing climate change at the local level in communities across California.

The CAP also identifies nine “co-benefits” that would result from the implementation of the CAP. These co-benefits are considered as additional valuable outcomes that are not the primary intent of climate change mitigation or adaptation actions, such as improvements to local air quality and water supply, increases in local green jobs and cost savings, and benefits to public health and improved mobility options. The CAP incorporates best practices to produce a blueprint for achieving GHG emissions reduction in Milpitas and ultimately, to comply with AB 32, SB 32, AB 1279 and SB 375.

The water supply and wastewater treatment sectors represent the city’s smallest emissions-generating sectors. Together, water and wastewater activities represented roughly one percent of community GHG emissions in 2019. State legislative actions (i.e., SB 100 [Renewables Portfolio Standard]) will eliminate water supply-related emissions in 2045, but wastewater treatment emissions will continue to grow over time. Although emissions from water supply will be eliminated and wastewater treatment will account for a minimal proportion of the city’s emissions in the future, implementing local actions focused on these

sectors will increase the pace of GHG emissions reductions while improving community resilience and energy reliability.<sup>23</sup>

The Milpitas Climate Action Plan includes the strategy for integrated resilience planning and improved biodiversity and habitat. This strategy is designed to prioritize nature-based solutions to improve resilience while promoting biodiversity by implementing the following action items (as related to this proposed project):

- Work with Valley Water to restrict future fencing, piping and channelization of creeks when flood control and public safety can be achieved through measures that preserve the natural environmental and habitat of riparian corridors; in addition, evaluate opportunities to revert some existing concrete-lined channels to more natural alternatives such as levees.
- Collaborate with Valley Water to support the priorities and projects of the Safe, Clean Water and Natural Flood Protection Program. Pursue grant funding opportunities from Valley Water to provide funding for water conservation, habitat restoration, and open space projects that increase community resiliency, while improving water quality and increasing flood safety throughout the community.
- Continue to collaborate with Valley Water and pursue grant funding from the district to support the priorities and projects of the Safe, Clean Water and Natural Flood Protection Program.
- Encourage and accommodate multipurpose flood control projects that incorporate recreation, education, resource conservation, preservation of natural riparian habitat, and the scenic value of drainages, creeks, and detention ponds.<sup>24</sup>

### **Santa Clara Valley Water Climate Change Action Plan**

In 2021, Santa Clara Valley Water published a Climate Change Action Plan (CCAP)<sup>25</sup> to guide Valley Water's climate change response through the development of goals and strategies that:

- reduce Valley Water's contribution to climate change by reducing GHG emissions (mitigation); and
- enable Valley Water to adapt to the potential impacts of climate change in each of Valley Water's mission areas.

The CCAP describes future climate impacts as well as agency-specific vulnerabilities and risks associated with climate change. The CCAP is intended as a plan that provides goals, establishes strategies, suggests possible actions, and proposes the development of an implementation program to achieve these goals and strategies. The program will instill climate resilience as a priority throughout Valley Water's many areas of work and will build and expand upon Valley Water's many existing climate-related efforts.<sup>26</sup>

---

<sup>23</sup> Milpitas Climate Action Plan, August 2022, <https://www.milpitas.gov/313/Climate-Action-Plan>

<sup>24</sup> Milpitas Climate Action Plan, August 2022, <https://www.milpitas.gov/313/Climate-Action-Plan>

<sup>25</sup> Santa Clara Valley Water, Climate Action Plan, July 2021, <https://www.valleywater.org/your-water/climate-change-action-plan>

<sup>26</sup> Santa Clara Valley Water Climate Action Plan, July 2021, <https://www.valleywater.org/your-water/water-supply-planning/climate-change-action-plan>

Goals, strategies, and possible actions were developed to guide Valley Water's climate change efforts. There are seven goals, three mitigation goals and four adaptation goals. The mitigation goals correspond to an internationally recognized system of carbon accounting that divides emissions into three scopes: direct emissions, purchased electricity, and indirect emissions. The adaptation goals correspond to Valley Water's three mission areas, with an additional goal to address emergency preparedness. Each goal contains strategies offering guidance on how to achieve the goal.

*Goal 1: Reduce Direct Greenhouse Gas Emissions (Scope 1)*

Scope 1 emissions (Direct Emissions) make up a small percentage of Valley Water's annual GHG emissions. In 2016, this category comprised about 13 percent of total recorded emissions. Valley Water plans to continue adding electric vehicles and other fuel-efficient vehicles to its fleet, along with implementing policies to promote EV use. These emissions have been reduced by providing more technology to support remote meetings, reducing the number of trips made, improving the availability of drop-in cubicles and pool vehicles, and by streamlining routes to minimize vehicle miles traveled. Valley Water plans to continue to replace various types of agency-owned equipment with more fuel efficient or electric models to reduce GHG emissions and updating diesel engines to comply with the Tier 4 diesel emissions mandate. Valley Water can further lower GHG emissions by improving the efficiency of heating and cooling equipment at agency facilities.

*Goal 2: Expand Renewable Energy and Improve Energy Efficiency (Scope 2)*

Scope 2 (purchased energy) emissions fluctuated by up to 6,000 metric tons of CO<sub>2</sub>e per year due to Valley Water's energy portfolio. Ninety-five percent of Valley Water's purchased electricity is sourced from the Power and Water Resources Pooling Agency (PWRPA), which enables Valley Water to source carbon-free electricity from utility-scale solar and hydroelectric projects. Emissions from PWRPA's electricity vary if environmental conditions change the availability of these forms of electricity. Purchased electricity makes up a small percentage of total GHG emissions.

Valley Water plans to continue to optimize energy use and reduce overall demand for purchased electricity. This can be achieved by improving the efficiency of office equipment and expanding energy and water saving measures through the Green Business Program's certification.

*Goal 3: Reduce Indirect Greenhouse Gas Emissions (Scope 3)*

GHG emissions (Scope 3) from importing water from the State Water Project consistently make up the largest percentage of Valley Water's GHG emissions. Other sources of imported water—the Central Valley Project and water distributed from the Hetch Hetchy system—use hydropower and therefore do not contribute to Valley Water's emissions. Emissions from imported water comprised about 75 percent of total GHG emissions. Other Scope 3 emissions from fuel use, employee commutes, and business travel remain relatively constant and make up a small portion of total emissions.

Policies that enable telework, alternative schedules, use of public transit, and other ways to reduce VMTs all contribute to reducing indirect GHG emissions. In addition, Valley Water's continuing to invest in EV charging stations and improve the convenience of their use further incentivize low emission commuting.



## Santa Clara Valley Water Greenhouse Gas Reduction Plan

Valley Water is preparing a Greenhouse Gas Reduction Plan (GHGRP) that is consistent with the framework outlined under CEQA Guidelines Section 15183.5. The GHGRP provides an inventory of Valley Water's GHG emissions through 2021, a forecast of future GHG emissions, and a list of measures to achieve a goal of net zero emissions by 2045. It provides specific measures to reduce GHG emissions and metrics to measure progress and will be considered for adoption in a public process following preparation of a CEQA document analyzing potential environmental impacts of the GHGRP. Consistency with the GHGRP can be used in the future, once it is adopted and the CEQA document certified, to streamline CEQA compliance for future Valley Water projects.<sup>27</sup>

## Greenhouse Gas Regional Emission Estimates

In 2022, the United States emitted about 6,343 million metric tons of CO<sub>2</sub>e or 5,489 million metric tons of CO<sub>2</sub>e after accounting for sequestration from the land sector. Emissions increased in 2022 by 1 percent. The increase in total GHG emissions was driven largely by an increase in CO<sub>2</sub> emissions from fossil fuel combustion. In 2022, CO<sub>2</sub> emissions from fossil fuel combustion increased by 1 percent compared to the previous year. This increase in fossil fuel consumption emissions was due in part to the continued rebound in economic activity after the height of the COVID-19 pandemic.<sup>28</sup>

According to USEPA, net emissions were 17 percent below 2005 levels. The recent decline is mostly due to a shift to less CO<sub>2</sub>-intensive natural gas for generating electricity and a rapid increase in the use of renewable energy in the electric power sector. Transportation activities accounted for 28 percent of total GHGs emissions in 2022. Emissions from electric power accounted for the second largest portion (25 percent), while emissions from industry accounted for the third largest portion (23 percent) of total GHG in 2022.<sup>29</sup>

In 2023, California emitted approximately 360 million metric tons of CO<sub>2</sub>e, 11 million metric tons of CO<sub>2</sub>e lower than 2022 levels and 60 million metric tons of CO<sub>2</sub>e below the 2020 GHG limit of 431 million metric tons of CO<sub>2</sub>e). The transportation sector represents 38 percent of the total GHG emissions. The industrial sector represents 22 percent of the total GHG emissions, followed by electricity (12 percent), and residential, agricultural, and commercial (10, 8, and 7 percent, respectively).<sup>30</sup>

In the San Francisco Bay Area, the GHG emissions inventory prepared by the BAAQMD indicates that the transportation and industrial/commercial sectors represent the largest sources of GHG emissions, accounting for 39.7 percent and 35.7 percent, respectively, of the Bay Area's 86.6 million tons of CO<sub>2</sub>e emissions in 2011. Electricity/co-generation sources account for approximately 14 percent of the Bay

---

<sup>27</sup> Santa Clara Valley Water, Greenhouse Gas Reduction Plan, November 2024, <https://www.valleywater.org/your-water/greenhouse-gas-reduction-plan>

<sup>28</sup> United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2022*, April 11, 2024, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

<sup>29</sup> United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2022*, April 11, 2024, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

<sup>30</sup> California Air Resources Board, *Emissions Trends Report 2000-2023 (2025 Edition)*, November 4, 2025, <https://ww2.arb.ca.gov/ghg-inventory-data>

Area's GHG emissions, followed by residential fuel usage at approximately 7.7 percent. Off-road equipment sources currently account for approximately 1.5 percent of total Bay Area GHG emissions.<sup>31</sup>

The latest inventory of greenhouse gas emissions in the City of Milpitas in 2019. The main sources that contribute to the City's emissions are from gasoline cars and natural gas-powered use in buildings. The Milpitas Climate Action Plan prioritizes actions to target and reduce the biggest emission sources. The 2019 baseline inventory estimated that community emissions were approximately 441,557 metric tons of CO<sub>2</sub>e. Emissions from on-road transportation, which include emissions from fossil fuel (i.e., gasoline and diesel) combustion in vehicles, accounted for approximately 59 percent of community emissions. The second-largest emissions sector, nonresidential building energy, contributed approximately 22 percent of community GHG emissions in 2019, and the residential building energy sector generated approximately 10 percent of the city's emissions. The solid waste and off-road vehicles and equipment sectors accounted for 5 percent and 4 percent, respectively, and wastewater treatment and water supply each contributed less than 1 percent of total emissions.<sup>32</sup>

The most recent final emissions inventory for Valley Water is presented in the Climate Action Plan, which summarizes GHG emissions and offsets from 2010 to 2017. In 2017, the total GHG emissions associated with Valley Water were 15,300 metric tons of CO<sub>2</sub>e. The GHG emissions sequestered or reduced were 19,235 metric tons of CO<sub>2</sub>e for a net reduction of 3,935 metric tons of CO<sub>2</sub>e.<sup>33</sup>

## Thresholds of Significance

CEQA Guidelines Appendix G includes a list of potentially significant project impacts. The project would have a GHG emissions impact if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHG.

CEQA Guidelines Section 15064.4 provides guidance to lead agencies for determining the significance of environmental impacts pertaining to GHG emissions. Section 15064.4(a) states that a lead agency should make a good-faith effort that is based, to the extent possible, on scientific and factual data to describe, calculate, or estimate the amount of GHG emissions that would result from implementation of a project. CEQA Guidelines Section 15064.4(b) also states that, when assessing the significance of impacts from GHG emissions, a lead agency should consider (1) the extent to which the project may increase or reduce GHG emissions compared with existing conditions, (2) whether the project's GHG emissions would exceed a threshold of significance that the lead agency has determined to be applicable to the project, and (3) the

---

<sup>31</sup> Bay Area Air Quality Management District, *Bay Area Emissions Inventory*, Adopted June 2011.

<sup>32</sup> Milpitas Climate Action Plan, August 2022, <https://www.milpitas.gov/313/Climate-Action-Plan>

<sup>33</sup> Santa Clara Valley Water Climate Action Plan, July 2021, <https://www.valleywater.org/your-water/water-supply-planning/climate-change-action-plan>

extent to which the project would comply with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Because the issue of global climate change is inherently a cumulative issue, the contribution of project GHG emissions to climate change is addressed as a cumulative impact. Some counties, cities, and air districts have developed guidance and thresholds for determining the significance of GHG emissions that occur within their jurisdiction. Valley Water is the CEQA lead agency for the project and is, therefore, responsible for determining whether GHG emissions with the project would have a cumulatively considerable contribution to climate change.

CEQA allows lead agencies to identify thresholds of significance applicable to a project that are supported by substantial evidence. Substantial evidence is defined in the CEQA statute to mean “facts, reasonable assumptions predicated on facts, and expert opinion supported by facts” (14 CCR 15384(b)).<sup>34</sup> Substantial evidence can be in the form of technical studies, agency staff reports or opinions, expert opinions supported by facts, and prior CEQA assessments and planning documents. Therefore, to establish additional context in which to consider the order of magnitude of the proposed project’s GHG emissions, this analysis accounts for the following considerations by other government agencies and associations about what levels of GHG emissions constitute a cumulatively considerable incremental contribution to climate change:

- Sacramento Metropolitan Air Quality Management District (SMAQMD) established thresholds, including 1,100 metric tons of CO<sub>2</sub>e per year for construction activities.<sup>35</sup>

As described, 1,100 metric tons of CO<sub>2</sub>e per year threshold for construction activities is used by several air districts in the State determining the significance of project-level GHG emissions. Therefore, the proposed project’s GHG emissions were compared to the 1,100 metric tons of CO<sub>2</sub>e per year for construction activities (i.e., offroad equipment and haul trucks). The substantial evidence for this GHG emissions threshold is based on the expert opinion of various California air districts, which have applied the 1,100 metric tons of CO<sub>2</sub>e per year in numerous CEQA documents where those air districts were the lead agency.

## **Project Greenhouse Gas Emissions**

The BAAQMD CEQA Guidelines do not identify a GHG emissions threshold for construction-related emissions; however, they do recommend that GHG emissions from construction be quantified and

---

<sup>34</sup> 14 CCR 15384 provides the following discussion: "Substantial evidence" as used in the Guidelines is the same as the standard of review used by courts in reviewing agency decisions. Some cases suggest that a higher standard, the so called "fair argument standard" applies when a court is reviewing an agency's decision whether or not to prepare an EIR. Public Resources Code section 21082.2 was amended in 1993 (Chapter 1131) to provide that substantial evidence shall include "facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." The statute further provides that "argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly inaccurate or erroneous, or evidence of social or economic impacts which do not contribute to, or are not caused by, physical impacts on the environment, is not substantial evidence."

<sup>35</sup> Sacramento Metropolitan Air Quality Management District, Guide to Air Quality Assessment in Sacramento County, May 2018, <http://www.airquality.org/Residents/CEQA-Land-Use-Planning/CEQA-Guidance-Tools>

disclosed and a determination regarding the significance of the GHG emissions be made with respect to whether the project in question is consistent with state goals regarding reductions in GHG emissions. GHG emissions due to construction activities were quantified using CalEEMod.

As noted in BAAQMD's *CEQA Air Quality Guidelines, Appendix B*, GHG emissions from construction represent a very small portion of a project's lifetime GHG emissions and operational emissions represent the vast majority of project GHG emissions. Construction emissions are a one-time release and would not result in a significant impact on the environment. Construction would utilize fuel efficient equipment and trucks consistent with state regulations and would be consistent with state regulations intended to reduce the inefficient, wasteful, or unnecessary consumption of energy, such as anti-idling and emissions regulations. Therefore, project construction would result in a less-than-significant impact.

The estimated construction GHG emissions are 1,588 (unmitigated) and 1,422 (mitigated) metric tons of CO<sub>2</sub>e. As indicated, 25-year (expected project lifetime) amortized annual construction related GHG emissions would be approximately 64 (unmitigated) and 57 (mitigated) metric tons of CO<sub>2</sub>e, which is below the significance threshold of 1,100 metric tons of CO<sub>2</sub>e per year.<sup>36</sup> **Table 6: Estimated Construction Greenhouse Gas Emissions** shows the estimated project GHG emissions.

**Table 6: Estimated Construction Greenhouse Gas Emissions (metric tons)**

| Project                  | CO <sub>2</sub> e |
|--------------------------|-------------------|
| <b>Total Unmitigated</b> | <b>1,588</b>      |
| <b>25-Year Amortized</b> | <b>64</b>         |
| Significance Threshold   | 1,100             |
| Significant (Yes or No)? | No                |
| <b>Total Mitigated</b>   | <b>1,422</b>      |
| <b>25-Year Amortized</b> | <b>57</b>         |
| Significance Threshold   | 1,100             |
| Significant (Yes or No)? | No                |

SOURCE: CARB CalEEMod

BAAQMD recommends that projects incorporate best management practices in order to minimize GHG emissions for projects using construction equipment (based on *BAAQMD CEQA Air Quality Guidelines*, Table 6-1). Therefore, the proposed project would implement **Mitigation Measure GHG-1**. Secondly, as part of the Water Stream Maintenance Program Update, the project would implement **Mitigation Measure GHG-2**.

---

<sup>36</sup> Given that the BAAQMD does not have a policy, construction emissions were amortized over 30 years consistent with SCAQMD's Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, December 5, 2008, [https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgboardsynopsis.pdf](https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf)

### **Mitigation Measure GHG-1: GHG Emissions Reduction Practices for Valley Water Maintenance Activities**

Consistent with the Valley Water Stream Maintenance Program Update,<sup>37</sup> Valley Water shall require the contractor to implement mobile source and other GHG emission reduction measures. All requirements shall be included in applicable bid documents, purchase orders, and constructs, with the contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and maintenance activities. The measures to include are as follows:

- Use zero-emission and hybrid-powered equipment to the greatest extent possible, provided adequate electricity supply and infrastructure is available in the planned work area. The performance criteria for meeting this standard are that at least two commercial rental facilities in the San Francisco Bay Area Air Basin are available, and that electricity and charging infrastructure be located near the planned work area.
- Require that all on-road heavy-duty trucks to meet the most stringent emissions standard as a condition of contract; this currently means that trucks need to be a 2015 model year (or newer).
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than two minutes. Provide clear signage that posts this requirement for workers at the entrances to the site.
- Use CARB-approved renewable diesel fuel R99 or R100 in off-road construction equipment and on-road trucks.
- Use USEPA SmartWay certified trucks for deliveries and equipment transport.
- Require that all construction equipment be maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a certified mechanic in accordance with the manufacturer's specifications and determined to be running in proper condition prior to operation.
- Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking to construction workers, and offer meal options on site or shuttles to nearby meal destinations for construction employees.
- Recycle or salvage nonhazardous construction and demolition debris.
- Develop a plan to efficiently use water for adequate dust control because substantial amounts of energy can be consumed during the pumping of water.

---

<sup>37</sup> Santa Clara Valley Water, Stream Maintenance Program Update Draft Subsequent Environmental Impact Report, July 2025, <https://www.valleywater.org/project-updates/stream-maintenance-program>

## **Mitigation Measure GHG-2: GHG Emissions Mitigation Program**

Notably, as part of the Water Stream Maintenance Program Update,<sup>38</sup> Valley Water will purchase GHG emissions credits annually to offset GHG emissions increases from the Water Stream Maintenance Program Renewal.

Valley Water will prioritize purchase of offsets that are not “otherwise required” (CEQA Guidelines Section 15126.4(c)(3)) using the following preference hierarchy: within the San Francisco Bay Area Air Basin, originating within California, and originating in other states with offset laws at least as strict as California’s. However, all offset credits shall meet the following validation criteria as defined by 17 CCR 95802: the offset credits must be real, permanent, quantifiable, verifiable, enforceable, and additional. Offset protocols must also be consistent with CARB requirements under 17 CCR 95972. Offset credits shall be registered with a recognized and reputable carbon registry (e.g., Climate Action Reserve, the American Carbon Registry, or Verra).

Valley Water will maintain documentation of any GHG offsets, ensuring that the offsets are real, permanent, quantifiable verifiable, enforceable, and additional. If in the future Valley Water approves a qualified GHGRP consistent with CEQA Guidelines Section 15183.5(b) and the Program Renewal is demonstrated to be consistent with the GHGRP, then the annual requirements for offsets may be replaced by implementing applicable measures in the GHGRP.

## **Consistency with State and Local GHG Reduction Plans**

In 2021, Santa Clara Valley Water published a CCAP.<sup>39</sup> The CCAP is a district-wide plan to reduce GHG emissions that is not applicable to individual projects. State plans for reducing GHG emissions include CARB’s 2017 Scoping Plan for achieving the 2030 GHG emissions reduction target outlined in SB 32 (40 percent below 1990 levels by 2030) and CARB’s 2022 Scoping Plan for achieving carbon neutrality by 2045 and 85 percent below 1990 levels. CARB’s scoping plans rely on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies, such as SB 100, which requires electricity providers to increase procurement from eligible renewable energy resources to 60 percent by 2030 and 100 percent by 2045.

The Valley Water CCAP provides goals, strategies, and possible actions to reduce its GHG emissions and address the ways that Valley Water is vulnerable to climate change impacts in each of Valley Water’s mission areas, including water supply, flood protection, and ecosystem stewardship. The CCAP sets seven goals to guide Valley Water’s response to climate change. project construction consistency with the CCAP is demonstrated, based on the following items, where project construction would be consistent with and not conflict with the Valley Water CCAP, and there would be a less-than-significant impact related to GHG emissions generation conflicting with the Valley Water CCAP:

---

<sup>38</sup> Santa Clara Valley Water, Stream Maintenance Program Update Draft Subsequent Environmental Impact Report, July 2025, <https://www.valleywater.org/project-updates/stream-maintenance-program>

<sup>39</sup> Santa Clara Valley Water, Climate Action Plan, July 2021, <https://www.valleywater.org/your-water/climate-change-action-plan>

- Construction equipment and fleets would reduce emissions through the use of engine electrification (including hybrid equipment), the use of renewable fuels where possible, and reduced idling time/equipment operation time. These actions would reduce GHG emissions from project construction equipment fleet.
- Project construction would utilize construction haul routes that are optimized to minimize GHG emissions.

CARB's 2022 Scoping Plan extends and expands upon earlier scoping plans with a target of reducing anthropogenic GHG emissions to 85 percent below 1990 levels by 2045. The 2022 Scoping Plan's strategies that are applicable to the project include reducing fossil fuel use, energy demand, and VMT. The actions and outcomes in the Scoping Plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Scoping Plan is implemented at the State level, and compliance at a specific plan or project level is not addressed in the Plan. The project would use vehicles and equipment that would meet current standards at the time of construction and would not conflict with the statewide programs designed to address GHG emissions reduction goals. The project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions and would have a less than significant impact on GHG emissions. As shown previously, the project's construction GHG emissions are less than significant.

The project would ensure that GHG emissions during construction activities would be minimized through implementation of best management practices. With the implementation of **Mitigation Measure GHG-1, Mitigation Measure GHG-2, Best Management Practice AQ-1, Mitigation Measure AQ-1, Best Management Practice AQ-2, and Best Management Practice AQ-2** project construction activities would utilize fuel efficient equipment and trucks consistent with state regulations and would be consistent with state regulations intended to reduce the inefficient, wasteful, or unnecessary consumption of energy, such as anti-idling and emissions regulations. Project construction activities would be consistent with SB 32, AB 1279, the 2022 Scoping Plan, the Valley Water CCAP, and City of Milpitas Climate Action Plan with implementation of **Mitigation Measure GHG-1, Mitigation Measure GHG-2, Best Management Practice AQ-1, Mitigation Measure AQ-1, Best Management Practice AQ-2, and Best Management Practice AQ-2**. Project construction activities would not conflict with these GHG reduction policies and plans without mitigation. Therefore, the project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions, and overall impacts would be less than significant.

The proposed project is consistent with applicable CCAP strategies as described within the following information:

Reduce GHG emissions Associated with the Valley Water fleet.

Consistent. Maintenance equipment and fleets would reduce emissions through the use of engine electrification (including hybrid equipment), the use of renewable fuels where possible, and

reduced idling time/equipment operation time. These actions would reduce GHG emissions from project construction equipment fleet.

Reduce GHG emissions from trips between Valley Water offices and work sites.

Consistent. Program Renewal activities would utilize maintenance routes that minimize GHG emissions.

Reduce GHG emissions associated with valley Water-owned equipment.

Consistent. Valley Water already uses electric, hybrid, and alternatively fueled equipment for Program activities and will continue to expand these under **Mitigation Measure GHG-1**.

Minimize GHG emissions associated with planning, design, construction, operation, and maintenance of capital projects.

Consistent. Maintenance equipment and fleets would reduce emissions through the use of engine electrification (including hybrid equipment), the use of renewable fuels where possible, and reduced idling time/equipment operation time. These actions would reduce GHG emissions from the Program Renewal maintenance equipment fleet.

Create and expand other efforts to minimize indirect GHG emissions.

Consistent. Valley Water's commitment to renewable energy sources minimizes indirect GHG emissions.

## **11.0 SUMMARY**

In summary, daily and annual construction activities emissions would not exceed the significance thresholds, as described in **Section 5**. Project construction emissions would be less than significant with mitigation (**Section 6**). Health Impacts (**Section 7**), odor impacts (**Section 8**), and cumulative impacts (**Section 9**) would be less than significant. GHG emissions would be less than significant with mitigation (**Section 10**). Therefore, the project would have a less than significant impact on air quality and GHG emissions.



## APPENDIX B

---

### Noise Technical Report

# Noise Technical Report

## Valley Water Tularcitos Creek Milpitas Project

**PREPARED BY:**

RCH Group  
Contact: *Luis Rosas, Noise Specialist*



**PREPARED FOR:**

Panorama Environmental, Inc.  
717 Market Street, Suite 650  
San Francisco, CA 94103



**February 10, 2026**



# TABLE OF CONTENTS

## VALLEY WATER TULARCITOS CREEK MILPITAS PROJECT

|                                                  | <u>Page</u> |
|--------------------------------------------------|-------------|
| <b>EXECUTIVE SUMMARY .....</b>                   | <b>1</b>    |
| <b>CHECKLIST .....</b>                           | <b>4</b>    |
| <b>SETTING .....</b>                             | <b>4</b>    |
| Noise Attenuation.....                           | 5           |
| Regulatory Context.....                          | 6           |
| Methodology and Existing Noise Environment ..... | 10          |
| <b>SIGNIFICANCE THRESHOLDS .....</b>             | <b>12</b>   |
| <b>DISCUSSION .....</b>                          | <b>12</b>   |
| <b>REFERENCES.....</b>                           | <b>17</b>   |

### TABLES

|                                                                       |    |
|-----------------------------------------------------------------------|----|
| Table 1. Typical Noise Levels .....                                   | 5  |
| Table 2. Stationary (Non-Transporation) Noise Source Standards .....  | 9  |
| Table 3 Existing Noise Levels .....                                   | 11 |
| Table 4 Typical Noise Levels from Construction Equipment (Lmax) ..... | 13 |
| Table 5. Representative Vibration Source Levels .....                 | 16 |

### FIGURES

|                                             |    |
|---------------------------------------------|----|
| Figure 1. Regional Overview .....           | 2  |
| Figure 2. Project Location.....             | 3  |
| Figure 3. Noise Measurement Locations ..... | 11 |

---

This page intentionally left blank

# NOISE TECHNICAL REPORT

---

## VALLEY WATER TULARCITOS CREEK MILPITAS PROJECT

### EXECUTIVE SUMMARY

This report analyzes the existing noise levels and potential noise impacts from the Valley Water Tularcitos Creek Milpitas project (the “project”). Valley Water is currently proposing the Tularcitos Creek Downstream North Hillview Drive Levee Repair. The proposed project is the repair of approximately 2,815 linear feet (by eight feet wide with a depth of three feet) of a non-accredited levee that has eroded due to damage from rodent activity along the west bank of Tularcitos Creek in the City of Milpitas. The project involves dewatering, installation and removal of a temporary access ramp, and bank stabilization along Tularcitos Creek between North Hillview Drive and Paseo Refugio in the City of Milpitas. The project area is approximately 2.7 acres. Work would only occur Monday through Friday between 7 a.m. and 7 p.m. Project generators (one primary and one backup) would operate 24 hours per day, seven days per week during the construction activities. The generators would be placed at the top of the left bank (westside), looking downstream, as far from residential areas as feasible. The project would be completed in approximately 120 working days.

The project site is located within the City of Milpitas, on Valley Water property, as shown in **Figure 1: Regional Overview**. Repair work would occur along and within the levee. The Tularcitos Creek, where project work would occur, is shown in **Figure 2: Project Location**.

To quantify existing ambient noise levels, RCH group conducted three short-term (10-minute) noise measurements at the project site. The main source of noise in the project vicinity during the noise measurements was traffic noise from Highway 680, heavy trucks, and overhead aircraft. Other minor noise sources included people playing pickleball and tennis at Peter Gill Memorial Park. Existing noise levels along the project site ranged from 46-63 dB, Leq (5-minute).

Construction of the project would be required to comply with the construction hours outlined in Section V-213-3(c) of the Milpitas Municipal Code. Per Section V-213-3(c), construction noise is exempt between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and weekends. No construction is permitted on holidays.

All noise and vibration impacts were found to be less than significant with mitigation.

**FIGURE 1: REGIONAL OVERVIEW**



FIGURE 2: PROJECT LOCATION





## CHECKLIST

| Would the project result in:                                                                                                                                                                                                                                                                              | Significant or Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less than Significant               | No Impact                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|-------------------------------------|--------------------------|
| a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?                                                         | <input type="checkbox"/>                      | <input checked="" type="checkbox"/>                       | <input type="checkbox"/>            | <input type="checkbox"/> |
| b) Generation of excessive groundborne vibration or groundborne noise levels?                                                                                                                                                                                                                             | <input type="checkbox"/>                      | <input type="checkbox"/>                                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/>                      | <input type="checkbox"/>                                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

## SETTING

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound pressure level has become the most common descriptor used to characterize the “loudness” of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Decibels are measured using different scales, and it has been found that A-weighting of sound levels best reflects the human ear’s reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. All references to decibels (dB) in this report will be A-weighted unless noted otherwise.

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are the equivalent A-weighted sound level over a given time period (Leq)<sup>1</sup>; average day–night 24-hour average sound level (Ldn)<sup>2</sup> with a nighttime increase of 10 dB to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL)<sup>3</sup>, also a 24-hour average that includes both an evening and a nighttime sensitivity weighting. **Table 1** identifies decibel levels for common sounds heard in the

<sup>1</sup> The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time-varying sound energy in the measurement period.

<sup>2</sup> Ldn is the day–night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.

<sup>3</sup> CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10-decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

environment. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans, 1998a):

- Under controlled conditions in an acoustics laboratory, the trained healthy human ear is able to discern changes in sound levels of 1 dB;
- Outside of such controlled conditions, the trained ear can detect changes of 2 dB in normal environmental noise;
- It is widely accepted that the average healthy ear, however, can barely perceive noise levels changes of 3 dB;
- A change in level of 5 dB is a readily perceptible increase in noise level; and
- A 10-dB change is recognized as twice as loud as the original source.

**TABLE 1. TYPICAL NOISE LEVELS**

| Noise Level (dB) | Outdoor Activity                                    | Indoor Activity                                       |
|------------------|-----------------------------------------------------|-------------------------------------------------------|
| 90+              | Gas lawn mower at 3 feet, jet flyover at 1,000 feet | Rock Band                                             |
| 80-90            | Diesel truck at 50 feet                             | Loud television at 3 feet                             |
| 70-80            | Gas lawn mower at 100 feet, noisy urban area        | Garbage disposal at 3 feet, vacuum cleaner at 10 feet |
| 60-70            | Commercial area                                     |                                                       |
| 40-60            | Quiet urban daytime, traffic at 300 feet            | Large business office, dishwasher next room           |
| 20-40            | Quiet rural, suburban nighttime                     | Concert hall (background), library, bedroom at night  |
| 10-20            |                                                     | Broadcast / recording studio                          |
| 0                | Lowest threshold of human hearing                   | Lowest threshold of human hearing                     |

SOURCE: (modified from Caltrans Technical Noise Supplement, 1998)

## NOISE ATTENUATION

Stationary point sources of noise, including construction equipment, attenuate (lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Soft sites attenuate at 7.5 dB per doubling because they have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. Hard sites have reflective surfaces (e.g., parking lots or smooth bodies of water) and therefore have less attenuation (6.0 dB per doubling). A street or roadway with moving vehicles (known as a “line” source), would typically attenuate at a lower rate, approximately 3 to 4.5 dB each time the distance doubles from the source, that also depends on ground absorption (Caltrans, 1998b). Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, would increase the attenuation that occurs by distance alone. Noise from large construction sites have characteristics of both “point” and “line” sources, so attenuation would probably range between 4.5 and 7.5 dB per doubling of distance.

## **Vibration**

Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment).

Vibration amplitudes are usually expressed in peak particle velocity (PPV), or root mean squared (RMS), as in RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (FTA 2018, Caltrans 2020). Vibrational effects from typical construction activities are only a concern within 25 feet of existing structures (Caltrans, 2002).

## **REGULATORY CONTEXT**

### **Federal and State**

There are no applicable federal or State noise requirements.

### **Local**

Valley Water is exempt from compliance with the local noise ordinances under California Government Code (CGC) § 53091(d) or (e), which state that county or city building and zoning ordinances do not apply to the construction of facilities for water storage or transmission. This analysis uses applicable policies and regulations from the Milpitas 2040 General Plan and Milpitas Municipal Code for guidance.

### **Valley Water Stream Maintenance Program Update, Draft Subsequent Environmental Impact Report**

The Valley Water Stream Maintenance Program Update Draft Subsequent Environmental Impact Report (EIR) (SCH 2000102055) evaluates the potential environmental effects of Valley Water's Stream Maintenance Program Renewal and its 10-year planning period from 2027 to 2036. This Draft EIR is currently in review<sup>4</sup>. Some of the noise reduction measures from the Mitigation Measure NZ-1 identified in Chapter 3.10 (Noise) are applicable to the project. Mitigation Measure NZ-1 from the EIR is the following:

**Mitigation Measure NZ-1: Implement Noise and Vibration Reduction Measures to Align with Local Noise Standards. Valley Water or its contractors shall implement the following noise reduction measures:**

1. All equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment.

---

<sup>4</sup> Santa Clara Valley Water, Stream Maintenance Program Update Draft Subsequent Environmental Impact Report, July 2025, <https://www.valleywater.org/project-updates/stream-maintenance-program>

2. The construction contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists.
3. Leaf blowers must be certified to be 65 dBA or less measured at 50 feet from the source of the noise.
4. Powered garden tools must not exceed 75 dBA at 25 feet from the source of the noise.
5. Woodchippers must not exceed 100 dBA at any point 25 feet from the source of the noise.
6. At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences.
7. Unnecessary idling of internal combustion engines shall be prohibited for a duration of longer than five minutes.
8. Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible.
9. The required construction-related noise mitigation plan shall also specify that haul truck deliveries are to occur within the same range of hours specified for construction equipment.
10. Neighbors located adjacent to the construction site shall be notified in writing of the construction schedule.
11. Use of temporary sound barriers shall be implemented in areas located near sensitive receptors to reduce noise levels to the extent feasible. Temporary noise barriers shall be rated to reduce noise at least 5 dBA.
12. Pile driving activities will use the least noisy method that would generate the least amount of vibration possible at a location, with hydraulic press being the preferred method, followed by the vibratory method. If no other method is feasible for the location, impact pile driving shall be used.
13. Avoid conflicts with local noise ordinances during prescribed herbivory. Prior to commencing prescribed herbivory treatments, Valley Water will post signs including contact information, including a daytime telephone number, of the project representative, who may be contacted regarding noise complaints. Valley Water will take into consideration future use of herbivory treatments in areas that receive noise complaints and may adjust the limits of treatment areas to be further from sensitive receptors.
14. Valley Water or the construction contractor shall designate a “noise disturbance coordinator” who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining

the cause of the noise complaint (e.g., starting too early, poor muffler) and instituting reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.

### **City of Milpitas 2040 General Plan**

The City of Milpitas 2040 General Plan Noise Element aims to address major noise sources and to promote safe and comfortable noise levels throughout Milpitas. The Noise Element contains goals, policies, and actions that seek to reduce community exposure to excess noise levels (City of Milpitas, 2021). The following policies and actions are relevant to the project:

Policy N 1-8: Require construction activities to comply with standard best practices to reduce noise exposure to adjacent sensitive receptors.

Policy N 1-12: Require non-transportation related noise from site specific noise sources to comply with the standards shown in Table N-2 (see **Table 2**).

Action N-1d: During the environmental review process, determine if proposed construction will constitute a significant impact on nearby sensitive receptors and, if necessary, require mitigation measures in addition to the standard best practice controls. Suggested best practices for control of construction noise include:

- Noise-generating construction activities, including truck traffic coming to and from the construction site for any purpose, shall be limited to between the hours of 7:00 am and 7:00 pm. No construction shall occur on National holidays.
- All equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment.
- The construction contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists.
- At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences.
- Unnecessary idling of internal combustion engines shall be prohibited for a duration of longer than five minutes.
- Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible.
- Neighbors located adjacent to the construction site shall be notified of the construction schedule in writing.
- The construction contractor shall designate a “noise disturbance coordinator” who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler, etc.) and instituting reasonable

measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.

**TABLE 2. STATIONARY (NON-TRANSPORATION) NOISE SOURCE STANDARDS**

| Land Use Receiving the Noise | Hourly Noise Level Descriptor | Exterior Noise-Level Standard (dBA) |                          |
|------------------------------|-------------------------------|-------------------------------------|--------------------------|
|                              |                               | Daytime (7 am – 10 pm)              | Nighttime (10 pm – 7 am) |
| Residential                  | Leq                           | 55                                  | 45                       |
|                              | Lmax                          | 70                                  | 65                       |

**NOTES:**

- the residential standards apply to all properties that are zoned for residential use. The exterior noise level standard is to be applied at the property line of the receiving land use or at a designated outdoor activity area. For mixed-use project, the exterior noise level standard may be waived in conjunction with Policy N 2-2 (at the discretion of the decision-making body) if the residential portion of the project does not include a designated activity area and mitigation of property line noise is not practical.
- Each of the noise levels specified above shall be lowered by 5 dBA for tonal noises characterized by a whine, screech, or hum, noises consisting primarily of speech or music, or recurring impulsive noises. In no case shall mitigation be required to a level that is less than existing ambient noise levels, as determined through measurements conducted during the same operational period as the subject noise source.
- In situations where the existing noise level exceeds the noise levels indicated in the above table, any new source must include mitigation that reduces the noise level of the noise source to the existing level plus 3 dB.

Source: City of Milpitas 2040 General Plan, Table N-2.

### City of Milpitas Municipal Code

Chapter 213 of the Milpitas Municipal Code (Noise Abatement) establishes allowable hours of construction for development projects in the City. The following is applicable to the project:

Section V-213-3(c), 2.07: No person shall engage or permit others to engage in construction of any building or related road or walkway, pool or landscape improvement or in the construction operations related thereto, including, delivery of construction materials, supplies, or improvements on or to a construction site except within the hours of 7:00 a.m. to 7:00 p.m. on weekdays and weekends. No construction work shall be conducted or performed on the holidays indicated in Section V-213-2-2.05<sup>5</sup> of this Chapter.

Section V-213-3(c), 2.08: Exemption from Off-Site Construction Regulations. Exempt from the Off-Site Construction Regulations of this article are as follows:

- Emergency construction and repair that is necessary for protection of life and property,
- Operation preempted from local regulation by state law, such as construction of public school buildings,
- Furnishing utility-type service including construction and maintenance of utility facilities,

<sup>5</sup> Per Section V-213-2-2.05 “Holiday” means New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

4. Any work on an existing single-family or duplex (two-family) dwelling undertaken by the property owner,
5. Operation to construct and maintain facilities within the public right-of-way as deemed necessary by the Public Works Director, and
6. Any other circumstances where the City Manager deems that an exemption would be appropriate.

### **Sensitive Receptors**

The City of Milpitas 2040 General Plan identifies sensitive receptors as residences (including residential care and assisted living facilities for the elderly), childcare centers, schools, playgrounds, churches, and medical facilities. The project site is in a suburban residential neighborhood. Nearby uses include single-family residences to the east, north, and west, open space to the west, and Peter Gill Memorial park to the west. The project site is within approximately 50 feet of nearby residences east of the project site, approximately 70 feet of nearby residences to the north, and approximately 150 feet of nearby residences to the west. Peter Gill Memorial Park is approximately 200 feet west of the levee; within the southern portion of the project.

## **METHODOLOGY AND EXISTING NOISE ENVIRONMENT**

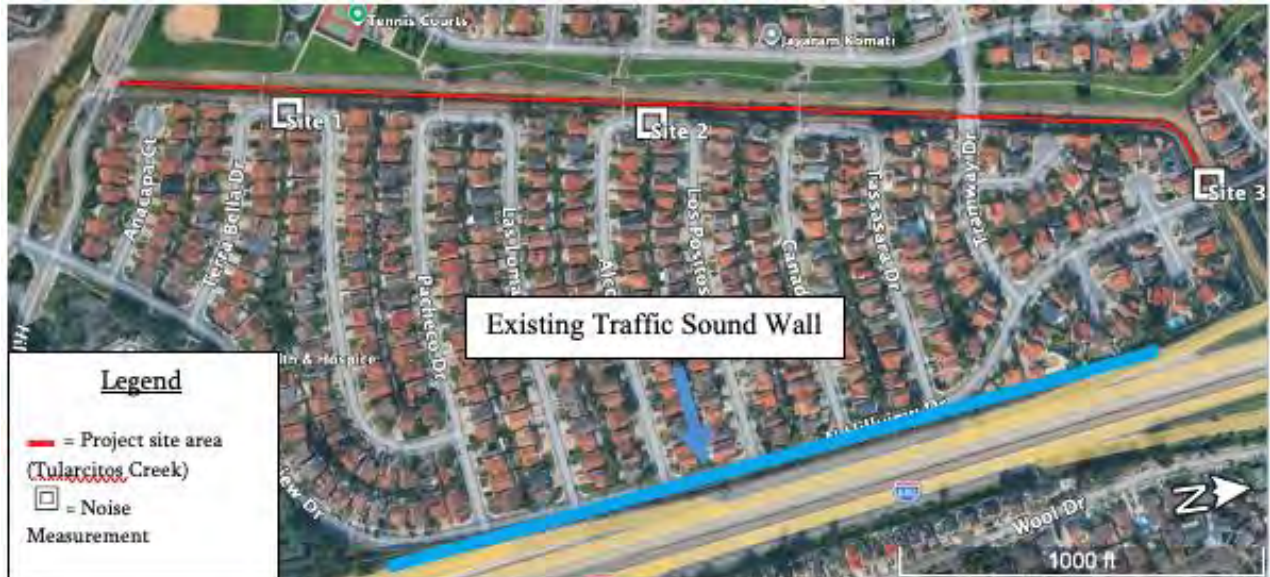
To quantify existing ambient noise levels, RCH group conducted three short-term (10-minute) noise measurements at the project site. A Larson Davis SoundTrack LxT (Type 1) Sound Level Meter calibrated before and after the measurements was used for the short-term measurements. **Table 3** summarizes the locations and results of the noise measurements. **Figure 3** shows the noise measurement locations on a map. The main source of noise in the project vicinity during the noise measurements was traffic noise from Highway 680, heavy trucks, and overhead aircraft. Other minor noise sources included people playing pickleball and tennis at Peter Gill Memorial Park. Existing noise levels along the project site ranged from 46-63 dB, Leq (5-minute).

Overall, the existing ambient noise environment at the project site is quiet and typical of suburban residential areas. The background noise was between 40-43 dB, Leq (5-minute) when no other noise sources were present at Sites 1 and 2. Note that an existing traffic sound wall significantly reduces the traffic noise from I-680 along the majority of the homes west of N Hillview Drive (between Anacapa Court and Del Rio Court). Site 3 was taken in an area not adjacent to the sound wall, thus, the noise measurements captured the constant heavy traffic noise from I-680 that ranged from 61-63 dB, Leq (5-minute).

**TABLE 3 EXISTING NOISE LEVELS**

| Location                                                                                                                                                                                                                               | Time Period                                                                  | Noise Levels (dB)         | Noise Sources                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site 1: 25 feet away from Tularcitos Creek. On Terra Bella Drive, approximately 50 feet away from nearest residence.                                                                                                                   | Friday January 23, 2026<br>11:26 a.m. to 11:36 a.m.<br>10-minute measurement | 5-minute Leq's:<br>47, 50 | Moving truck passing by on Terra Bella Drive was 66 dB. People playing pickleball at Peter Gill Memorial Park was 40-45 dB. Background noise was 40-42 dB when no other noise sources were present. |
| Site 2: 25 feet away from Tularcitos Creek. On Alcosta Drive, approximately 40 feet away from nearest residence.                                                                                                                       | Friday January 23, 2026<br>11:41 a.m. to 11:51 a.m.<br>10-minute measurement | 5-minute Leq's:<br>51, 46 | Airplanes overhead were 50-55 dB. Background noise was 41-43 dB when no other noise sources were present.                                                                                           |
| Site 3: 15 feet away from Tularcitos Creek. On N Hillview Drive, approximately 30 feet away from nearest residence. Approximately 350 feet away from I-680 in an area that does not provide noise reduction from a traffic sound wall. | Friday January 23, 2026<br>11:56 a.m. to 12:06 p.m.<br>10-minute measurement | 5-minute Leq's:<br>63, 61 | Constant traffic on I-680 was 60-73 dB. No other noise sources were dominant over the noise from I-680.                                                                                             |

SOURCE: RCH GROUP, 2026

**FIGURE 3: NOISE MEASUREMENT LOCATIONS**



## SIGNIFICANCE THRESHOLDS

The significance of potential impacts was determined based on Appendix G of the *CEQA Guidelines*. Using Appendix G evaluation threshold, the project would be considered to have significant noise impacts if the project would:

- Generate a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
  - Temporary construction noise impacts would be significant if construction noise would conflict with the construction hours outlined in Section V-213-3(c) of the Milpitas Municipal Code. Per Section V-213-3(c), construction noise is exempt between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and weekends. No construction is permitted on holidays.
  - Temporary construction noise impacts would be significant if nighttime construction noise from the use of generators would exceed 45 dB, Leq at the nearest residence.
  - Operational noise impacts would be significant if project operational noise would exceed the maximum permitted noise level of 45 dB, Leq or 65 dB, Lmax (nighttime hours) at the nearest property line of the project site for residential uses (**see Table 2**).
- Generate excessive groundborne vibration or groundborne noise levels; or
  - Temporary construction vibration impacts would be significant if construction vibration would exceed 0.5 in/sec PPV at the nearest off-site structures.
- For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, expose persons residing or working in the project area to excessive noise levels.

## DISCUSSION

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

### ***Construction Related Noise Impacts***

#### Daytime Construction Noise

Construction would result in a temporary increase in ambient noise levels in the vicinity of the project. Construction activities would require the use of numerous pieces of noise-generating equipment (e.g., compactors, excavators, loaders, generators, etc.). The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the condition of the equipment, the operation being performed, the location of the operations, and the prevailing wind direction. Construction of the project would not involve demolition or pile driving.

As discussed, the project site is in a suburban residential neighborhood. Nearby uses include single-family residences to the east, north, and west, open space to the west, and recreational park uses to the west. The project site is within approximately 50 feet of nearby residences east of the project site, approximately 70 feet of nearby residences to the north, and approximately 150 feet of nearby residences to the west. The maximum noise levels at 50, 70 and 150 feet for various types of construction equipment that could be used for project construction are provided in **Table 4**.

**TABLE 4 TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT (LMAX)**

| Construction Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Noise Level (dB, Lmax at 50 feet) | Noise Level (dB, Lmax at 70 feet) | Noise Level (dB, Lmax at 150 feet) |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|------------------------------------|
| Generator <sup>1,2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 59                                | 56                                | 50                                 |
| Compactor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 83                                | 71                                | 65                                 |
| Excavator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 81                                | 78                                | 72                                 |
| Loader                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 79                                | 76                                | 70                                 |
| Pickup Truck                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 75                                | 72                                | 66                                 |
| Dump Truck                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 76                                | 73                                | 67                                 |
| Water Truck                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 74                                | 71                                | 65                                 |
| <p>NOTES:</p> <p>1. The noise level for the proposed generators comes from the manufacturer specification for a 45 KVA 36 kW diesel generator that is proposed to be used by Valley Water or its contractors.</p> <p>2. Reference noise level of 66 dB at 23 feet is assumed and is based on manufacturer specifications. An attenuation rate of 6.0 dB per doubling of distance was used to convert the generator noise levels at 23-feet to the noise levels at 50, 70 and 150 feet.</p> <p><math>L_{max}</math> = maximum sound level</p> <p>A 6.0 dB attenuation rate was assumed per doubling of distance.</p> <p>SOURCE: Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide, 2006.</p> |                                   |                                   |                                    |

As shown in **Table 4**, construction equipment could generate noise levels between 50-83 dB, Lmax, depending on how far away construction is occurring from the nearest residences. For construction occurring within the creek, an additional 3-5 dB attenuation could be expected due to the barrier the creek banks create (assuming there is no direct line of sight between the construction within the creek and the nearest residences).

For construction occurring in areas to the east of the project site that are in quiet residential neighborhoods and separated from I-680 by an existing traffic sound wall (i.e., homes west of N Hillview Drive between Anacapa Court and Del Rio Court), these construction activities would substantially elevate existing ambient noise levels, even with the attenuation provided when work is occurring within the creek banks. Construction activities would create less noise impacts in areas that are not separated from I-680 by the existing traffic sound wall (i.e., homes north of Del Rio Court) or are farther away from the project site because the existing traffic noise is the dominant source of noise in these areas.

Construction activities would be very short-lived at each construction area due to the linear nature of the project site. Thus, the substantial increase in existing noise levels from construction would result in a very short-term impact to adjacent residences. The majority of construction (except the use of two generators for dewatering) would only occur within the allowable hours established in Section V-213-3(c) of the City of Milpitas Municipal Code. Moreover, Valley Water is not

subject to local noise ordinances and has exclusive jurisdiction to construct and repair water storage and water transmission facilities within its service area. Nonetheless, **Mitigation Measure NOI-1** would be implemented to reduce temporary daytime construction noise impacts (consistent with Action N-1d of the City of Milpitas 2040 General Plan and with Mitigation Measure NZ-1 of the Valley Water Stream Maintenance Program Update Draft Subsequent EIR). Therefore, with implementation of **Mitigation Measure NOI-1**, temporary daytime construction noise impacts would be **less than significant with mitigation**.

### ***Mitigation Measures***

**Mitigation Measure NOI-1:** Consistent with Action N-1d of the City of Milpitas 2040 General Plan and Mitigation Measure NZ-1 of the Valley Water Stream Maintenance Program Update Draft Subsequent EIR, Valley Water or its contractors shall implement the following noise reduction and control measures:

- Prior to the start of construction activities, designate a Construction Noise Coordinator who would be responsible for responding to any local complaints about construction noise or vibration. The Construction Noise Coordinator shall determine the cause of the complaint and shall require that reasonable measures warranted to correct the problem be implemented. The telephone number for the Construction Noise Coordinator shall be conspicuously posted at the construction site.
- Prior to the start of construction activities, provide written notification to all residential units within 150 feet of the construction site informing them of the estimated start date and duration of construction activities, hours of construction, and the telephone number for the Construction Noise Coordinator.
- All construction equipment shall be properly outfitted and maintained with manufacturer-recommended noise-reduction devices.
- At all times during construction, stationary noise-generating equipment shall be located as far as feasible from nearby residences and placed so that emitted noise is directed away from nearby residences.
- Unnecessary idling of internal combustion engines shall be prohibited for a duration of longer than five minutes.
- Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and residences nearest to the project site during all construction activities, to the extent feasible.

### **Nighttime Construction Noise**

As discussed above, two generators would be used for dewatering activities at the project site. These two generators are anticipated to operate 24 hours a day. This analysis conservatively assumes two generators would be operating simultaneously side by side on a trailer at bank level elevation, thus no attenuation from topographic shielding between nearby residents and the generators was assumed. The use of generators during nighttime hours (7 p.m. to 7 a.m.) could result in a potential annoyance to residences nearby the project site. This analysis uses a significance threshold of 45 dB, Leq, at the nearest residence during nighttime hours (7 p.m. to 7

a.m.) to determine if nighttime use of the generators would be a potentially significant impact. A 45 dB, Leq threshold was chosen because any noise that exceeds 45 dB, Leq during nighttime hours could result in sleep disturbances for residences in the vicinity of the generators.

**Mitigation Measure NOI-2** would be implemented to reduce temporary nighttime construction noise impacts from the generators by requiring that the generators only operate on the west bank of the project site, further away from the residences to the east. Assuming that the generators would only operate on the west side of the project site, residences to the west of the project site could be as close as 140 feet away from the generators. Noise levels from the generators at 140 feet are predicted to be 53 dB, Leq. It should be noted that these are estimates based on current equipment specifications and implementation of **Mitigation Measure NOI-2**. This noise level would exceed the 45 dB, Leq significance threshold. Thus, the use of the generators during nighttime hours would result in a significant impact (without mitigation).

Implementation of **Mitigation Measure NOI-3** would attenuate noise from the generators by approximately 20 dB, to 33 dB, Leq, through the use of four-sided noise barriers or sound blankets around the generators; Thus, noise levels would fall below the 45 dB, Leq, threshold. Therefore, with implementation of **Mitigation Measure NOI-2 and NOI-3**, temporary nighttime construction noise impacts would be **less than significant with mitigation**.

### ***Mitigation Measures***

**Mitigation Measure NOI-2:** Valley Water or its contractors shall only operate the generators on the west bank of the project site, as far as feasible from nearby residences.

**Mitigation Measure NOI-3:** Valley Water or its contractors shall install four-sided noise barriers/sound blankets around the generators.

### ***Operational Noise Impacts***

Once operational, noise generated by the project site during operation and maintenance (O&M) activities would be consistent with the existing practices and uses. As a result, the current ambient noise levels (see **Table 3**) would remain the same as a result of project operation. The project would not result in an increase in traffic on local roadways. In addition, the project would not develop new permanent stationary noise sources. Therefore, operational noise impacts would be **less than significant**.

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

Construction activities have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. In most cases, vibration induced by typical construction equipment does not result in adverse effects on people or structures (Caltrans, 2013). The project would not involve the use of construction equipment or processes that would result in potentially significant levels of ground vibration (i.e., pile drivers or blasting). At the highest levels of vibration, damage to structures is primarily

architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. For most structures, a peak particle velocity (PPV) threshold of 0.5 inch per second or less is sufficient to avoid structural damage. Vibrational effects from typical construction activities are only a concern within 25 feet of existing structures (Caltrans, 2002). Construction would not occur within 25 feet of an existing off-site structure. The estimated PPV for heavy construction equipment at the reference distance of 25 feet and the nearest residence to the project at 50 feet are summarized in **Table 5**.

**TABLE 5. REPRESENTATIVE VIBRATION SOURCE LEVELS**

| Construction Equipment | PPV at 25 feet (in/sec) | Distance to the nearest receptor | PPV at nearest receptors to the Project (in/sec) |
|------------------------|-------------------------|----------------------------------|--------------------------------------------------|
| Loaded Trucks          | 0.076                   | 50                               | 0.03                                             |
| Excavator <sup>1</sup> | 0.175                   | 50                               | 0.06                                             |
| Backhoe <sup>1</sup>   | 0.028                   | 50                               | 0.01                                             |
| Loader <sup>1</sup>    | 0.0263                  | 50                               | 0.01                                             |

NOTE:

<sup>1</sup> Construction Equipment PPV reference from NHDOT, *Ground Vibrations Emanating from Construction Equipment* (FHWA-NH-RD-12323W), 2012. <https://mm.nh.gov/files/uploads/dot/remote-docs/nhdot-research-12323w-2012-report.pdf>

SOURCE: Federal Transit Administration, 2006.

As shown in **Table 5** the predicted vibration levels from construction activities occurring within 50 feet would range between 0.01 and 0.06 PPV, well below the 0.5 PPV threshold for potential architectural damage to residential structures. Therefore, the impacts of temporary construction vibration would be **less than significant**.

**c) For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

The nearest airport is the San Jose Mineta International Airport (located approximately 5 miles southwest of the project site). Several overhead aircraft events were observed between 50-55 dB, Lmax during noise survey observations (see **Table 3**). Implementation of the project would not exacerbate existing aircraft noise and would not expose people working or living in the area to excessive airport/aircraft noise levels. Therefore, aircraft noise impacts would be **less than significant**.

## REFERENCES

- California Department of Transportation (Caltrans). 2013. *Technical Noise Supplement*. <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf>
- California Department of Transportation (Caltrans). 1998a. *Technical Noise Supplement*. <https://rosap.nhtl.bts.gov/view/dot/27590>
- California Department of Transportation (Caltrans). 1998b. *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*. <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/f0008617-traffic-noise-protocol-oct1998-a11y.pdf>
- California Department of Transportation (Caltrans). 2020 *Transportation and Construction Vibration Guidance Manual*. (CT-HWANP-RT-20-365.01.01). <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvqm-apr2020-a11y.pdf>
- California Department of Transportation (Caltrans). 2002. *Transportation Related Earthborne Vibrations*. [https://www.vibrationdata.com/tutorials\\_alt/caltrans\\_earth.pdf](https://www.vibrationdata.com/tutorials_alt/caltrans_earth.pdf)
- City of Milpitas. 2021. *City of Milpitas 2040 General Plan*. [https://www.milpitas.gov/DocumentCenter/View/8465/Milpitas-General-Plan\\_Final\\_online-version\\_8-20-25](https://www.milpitas.gov/DocumentCenter/View/8465/Milpitas-General-Plan_Final_online-version_8-20-25)
- City of Milpitas. *Chapter 213 Noise Abatement*. [https://library.municode.com/ca/milpitas/codes/code\\_of\\_ordinances?nodeId=TITVPUHES\\_AWE\\_CH213NOAB](https://library.municode.com/ca/milpitas/codes/code_of_ordinances?nodeId=TITVPUHES_AWE_CH213NOAB)
- Federal Highway Administration (FHWA). 2006. *Roadway Construction Noise Model User's Guide*. [https://planning.lacity.gov/eir/8150Sunset/References/4.G.%20Noise/N.07\\_FHWA%20User%20Guide\\_2006.pdf](https://planning.lacity.gov/eir/8150Sunset/References/4.G.%20Noise/N.07_FHWA%20User%20Guide_2006.pdf)
- Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment*. [https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123\\_0.pdf](https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf)
- Federal Transit Administration (FTA). 2006. *Transit Noise and Vibration Impact Assessment*. (FTA-VA-90-1003-06). [https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA\\_Noise\\_and\\_Vibration\\_Manual.pdf](https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf)