Santa Clara Valley Water District

Guadalupe River Bank Stabilization Project: Malone Road and Blossom Hill Road

Draft Initial Study and Mitigated Negative Declaration

June 2025

Prepared for:
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Acronyms and Abbreviations

Avoidance and Minimization Measure ..... AMM

Bay Area Air Quality Management District ..... BAAQMD

Best Management Practice ..... BMP

California Air Resources Board ..... CARB

California Department of Fish and Game ..... CDFG

California Department of Fish and Wildlife ..... CDFW

California Department of Forestry and Fire Protection ..... CAL FIRE

California Environmental Quality Act ..... CEQA

California Governor's Office of Emergency Services ..... Cal OES

California Native Plant Society ..... CNPS

California Office of Environmental Health Hazard Assessment ..... OEHHA

California Regional Water Quality Control Board ..... RWQCB

Carbon Dioxide ..... CO_2e

carbon monoxide ..... CO

Certified United Program Agencies ..... CUPA

Clean Air Act ..... CAA

Climate Change Action Plan ..... CCAP

diameter at breast height ..... dbh

Diesel Particulate Matter ..... DPM

Division of Occupational Safety and Health ..... Cal/OSHA

Endangered Species Act ..... ESA

Federal Emergency Management Agency ..... FEMA

Federal Transit Administration ..... FTA

Acronyms and Abbreviations

Fire Hazard Severity Zone ..... FHSZ

Flood Insurance Rate Map ..... FIRM

Greenhouse Gases ..... GHG

Habitat Conservation Plan ..... HCP

Hazard Index ..... HI

Hazard Quotient ..... HQ

Health Risk Assessment ..... HRA

Initial Study ..... IS

Leaking Underground Storage Tank ..... LUST

Local Responsibility Area ..... LRA

Maximum Exposed Individual Residence ..... MEIR

Migratory Bird Treaty Act ..... MBTA

Mitigated Negative Declaration ..... MND

National Flood Hazard Layer ..... NFHL

National Pollutant Discharge Elimination System ..... NPDES

Natural Resources Conservation Service ..... NRCS

nitrogen oxides ..... NO_x

Occupational Safety and Health Administration ..... OSHA

Open Space, Parklands and Habitat ..... OSPH

Ordinary High-Water Mark ..... OHWM

professional geologist ..... PG

reactive organic gases ..... ROG

Reference Exposure Level ..... REL

Sacramento Metropolitan Air Quality Management District ..... SMAQMD

San Francisco Bay Area Air Basin ..... SFBAAB

San Francisco Bay Regional Water Quality Control Board ..... RWQCB

San Francisco Regional Water Quality Control Board ..... SFRWQCB

Acronyms and Abbreviations

San Jose Fire Department ..... SJFD

Santa Clara Valley Habitat Plan ..... VHP

Santa Clara Valley Water District ..... Valley Water

Sate Responsibility Area ..... SRA

State Water Resources Control Board ..... SWRCB

Stormwater Pollution Prevention Plan ..... SWPPP

Stream Maintenance Program ..... SMP

sulfur dioxide ..... SO_2

U.S. Army Corps of Engineers Nationwide 13 Permit ..... NWP 13

U.S. Environmental Protection Agency ..... US EPA/EPA

U.S. Geological Survey ..... USGS

Vehicle miles traveled ..... VMT

volatile organic compounds ..... VOC

Water Quality Control Plan for the San Francisco Bay Basin ..... Basin Plan

Wildland–Urban Interface ..... WUI

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1 Introduction

1.1 Organization of This Document

This document is organized to assist the reader in understanding the potential impacts that the Project may have on the environment and to fulfill the California Environmental Quality Act (CEQA) (Public Resources Code §§ 21000 et seq.). Section 1 describes the purpose of the Initial Study under CEQA, sets forth the public participation process, and summarizes local, state, and federal regulatory requirements applicable to the Project. Section 2, Project Description, describes the location and features of the Project and the environmental setting. Section 3 evaluates the potential impacts of the proposed project through the application of the CEQA Initial Study Checklist questions. Section 4 provides the list of preparers, and Section 5 supplies the references for sources used in the preparation of the Initial Study.

1.2 Purpose of The Initial Study/Mitigated Negative Declaration

The Santa Clara Valley Water District (Valley Water), acting as the lead agency under CEQA, prepared this Initial Study (IS) and draft Mitigated Negative Declaration (MND) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of bank stabilization as proposed at two sites along the Guadalupe River.

This Initial Study was prepared consistent with CEQA, the CEQA Guidelines (Title 14, California Code of Regulations §§ 15000 et seq.), and Valley Water's procedures for implementation of CEQA (Environmental Management System - Environmental Planning Q520D01).

CEQA requires that public agencies such as Valley Water identify the significant adverse impacts and beneficial environmental effects of their actions. Beneficial effects should be encouraged and expanded where possible, and adverse impacts should be avoided or minimized or, in cases where avoidance and minimization are not possible, mitigated. In addition to acting as the CEQA Lead Agency for its projects, Valley Water's mission includes objectives to conduct its activities in an environmentally sensitive manner as a steward of Santa Clara Valley watersheds. Valley Water strives to preserve the natural qualities, scenic beauty, and recreational uses of Santa Clara Valley's waterways by using methods that reflect an ongoing commitment to conserving the environment.

1.3 Decision to Prepare a Mitigated Negative Declaration for This Project

The IS (Section 3) for the Project identifies potentially significant effects on air quality, biological resources, geology and soils, and noise that could result from implementation of the Project. Mitigation measures have been proposed for the Project that would reduce any potential impacts to less than significant levels, and Valley Water has committed to implementing such measures. Accordingly, preparation of an MND for the Project complies with CEQA Guidelines section 15070(b), which indicates that an MND is appropriate when a project's IS identifies potentially significant effects but:

- Revisions to the project were made that would avoid or reduce the effects to a point where clearly no significant effects would occur; and
- There is no substantial evidence that the project, as revised, may have a significant effect on the environment.

1.4 Public Review Process

This draft MND will be circulated to local and state agencies, interested organizations, and individuals who may wish to review and provide comments on the Project description, the proposed mitigation measures, or other aspects of the Project. The publication of this MND will commence the 30-day public review period, per CEQA Guidelines section 15105(b), beginning on June 26, 2025, and ending on July 28, 2025.

The Draft MND and supporting documents are posted on the Valley Water website:

https://www.valleywater.org/public-review-documents

A hard copy of the Draft MND and supporting documents are available at Valley Water Headquarters building: 5700 Almaden Expressway San Jose, CA 95118-3614.

Written comments or questions regarding the Draft MND should be submitted to Lawrence Truong at the address indicated below no later than July 28, 2025. The final MND along with any comments received by Valley Water during the public review period will be considered by Valley Water prior to a decision on the Project.

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1.5 Interagency Coordination and Regulatory Review

The CEQA review process is intended to provide both trustee and responsible agencies with an opportunity to provide input into the Project. A *trustee agency* is a state agency that has jurisdiction by law over natural resources held in trust for the public. A *responsible agency* is any state or local agency that bears some responsibility or discretionary authority for approving or implementing a project or portion thereof. In many instances, a responsible agency must make a discretionary decision to issue a local permit or to grant right-of-way, funding, or resources that are critical to a project's implementation. The responsible agencies for the Project are the Santa Clara Valley Habitat Agency, California Department of Fish and Wildlife (CDFW), and San Francisco Bay Regional Water Quality Control Board (RWQCB). Valley Water will provide the draft IS/MND to these responsible agencies for their review and comment. In addition to state and local agencies, the Project may also require permits or approvals by federal agencies.

The Project will require project-specific permitting or approval from the following federal and state agencies, as summarized below.

- U.S. Army Corps of Engineers: Nationwide 13 Permit (NWP 13)
- California Regional Water Quality Control Board: Clean Water Act Section 401 Water Quality Certification or Waste Discharge Requirements (WDR; Discharges to Waters of the State)
- California Department of Fish and Wildlife: Fish and Game Code section 1602 Lake and Streambed Alteration Agreement

2 Project Description

2.1 Project Background

Valley Water is proposing the Guadalupe River Bank Stabilization Project (Project). The Project would involve bank stabilization at two locations (Project sites) along the Guadalupe River, where in-stream structures have significant erosion and subsequent damage has occurred at the embankment , potentially risking impact to neighboring properties.

The in-stream structures are located at the Guadalupe River crossings at Malone Road and Blossom Hill Road in the City of San José. The Project would consist of repairs to address the existing broken concrete slope paving and failed gabion baskets as well as include the removal of vegetation and trees. The repairs would span approximately 410 linear feet along the length of the channel.

Stream maintenance activities are generally covered under Valley Water's Stream Maintenance Program (SMP). However, the Project would require removal of trees with a *diameter at breast height* (dbh) greater than 12 inches, which is greater than what is allowed under the SMP.

2.2 Location

The Project sites are located on either Valley Water fee title or easement property within the City of San José, as shown in Figure 2.2-1. Repair work would occur at the Guadalupe River crossing along the top of the east bank upstream of Malone Road. Primary staging and access would occur along the top of the west bank upstream of Malone Road, supplemented by one other staging area along the top of the east bank upstream of Malone Road. Repair work, staging, and access would also occur at the Guadalupe River crossing along the west bank at Blossom Hill Road. The Guadalupe River crossing locations where Project work would occur are shown in Figure 2.2-2 and Figure 2.2-3 .The Project site is categorized as Open Space, Parklands and Habitat (OSPH) under the City of San José 2040 General Plan (City of San José 2011).

Adjacent residential neighborhoods and urban development surround both Project sites. The nearest residences to the Malone Road Project site, surrounding the site along Malone Road and Almaden Road, are approximately 50 feet from the Project site boundary (see Figure 2.2-2). The nearest residences to the Blossom Hill Road Project site are approximately 450 feet northeast of the Project site along Blossom River Drive (see Figure 2.2-3).

Figure 2.2-1 Regional Overview

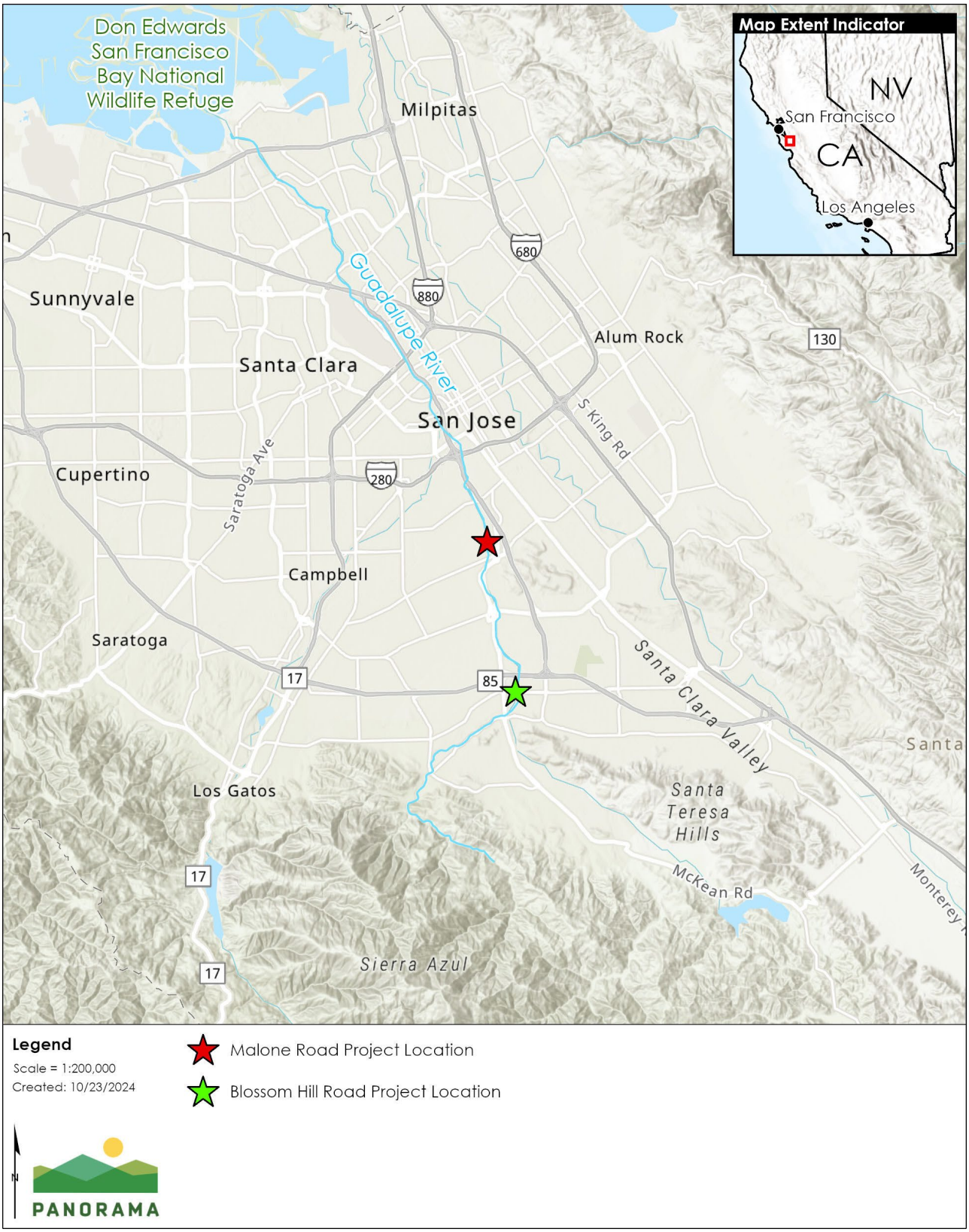
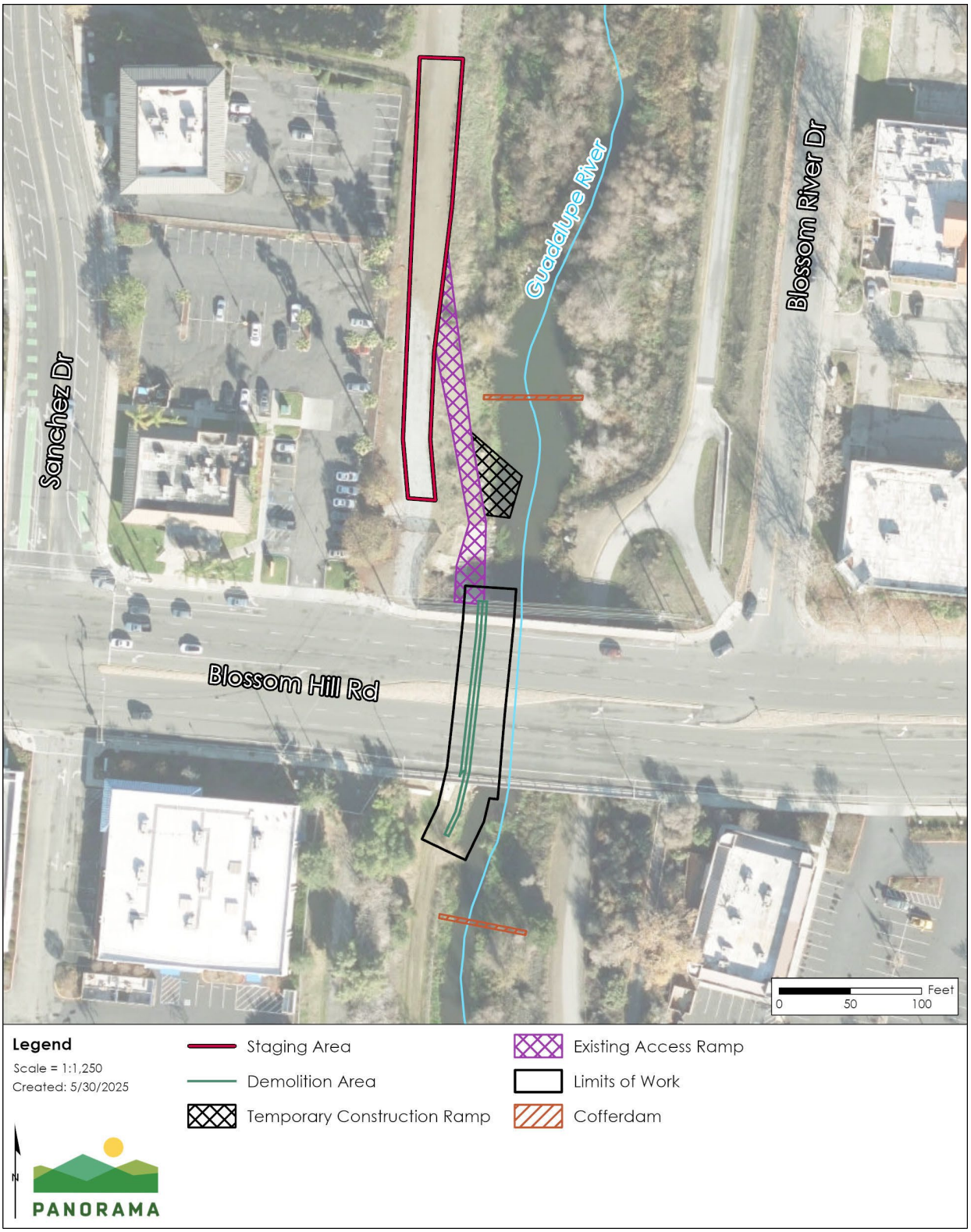


Figure 2.2-2 Project Location – Malone Road



Figure 2.2-3 Project Location – Blossom Hill Road



2.3 Project Purpose

The purpose of the Project is to address ongoing erosion of the concrete slope embankment and cutoff wall footing as well as the failed gabion baskets. The ongoing erosion threatens the structural integrity of the embankment. The Project would include repairs to address the existing broken concrete-lined embankment and failed gabion baskets as well as removal of vegetation and trees that are exacerbating erosion.

2.4 Project Activities

2.4.1 Guadalupe River Crossing Upstream of Malone Road

The Guadalupe River crossing upstream of the Malone Road Project site is approximately 10,890 square feet (ft^2). The concrete -lined embankment area is approximately 8,050 ft^2 (145 linear feet), and the eroding concrete cutoff wall footing area is approximately 460 ft^2.

A segment of the existing concrete -lined embankment and corresponding footing has eroded along the outside bend of the Guadalupe River, creating a large cavity. The resulting washing away of the underlying earthen material and fill has been exacerbated by high-flow events that typically accompany heavy rainfall. During intense precipitation, increased runoff contributes to the discharge and velocity of the river, strengthening the hydraulic force exerted on the river bank. The continued erosion has compromised the structural integrity of the concrete embankment as well as the adjacent retaining wall at the top of east bank along Almaden Road. Additionally, several trees have grown through the eroded concrete slope paving, further compromising the structural integrity of the concrete embankment.

Project activities would include tree removal, creating an active water bypass system throughout the length of the Project site, and installation of a concrete slope paving with compacted earth backfill utilizing concrete slope protection and footing with embedded rock riprap in the eroded cavity and along the concrete footing. Valley Water would import approximately 340 cubic yards (CY) of 1-ton rock riprap to armor the new cutoff wall footing against scour. Two 100- to 110-foot-long temporary access ramps would be installed on the west bank to gain access to the channel from the vacant lot at the top of the west bank. In certain areas, where there are existing voids in the channel embankment due to scouring at the failed concrete footing, riprap and slurry mix would be placed to fill the voids below finished grade, as well as, 1-ton riprap will be placed along the channel bottom so as to match the bed slope at the upstream transition areas. The upstream Malone Road Project site would require approximately 150 CY of concrete.

2.4.2 Guadalupe River Crossing at Blossom Hill Road

The Guadalupe River crossing at Blossom Hill Road Project site is approximately 4,356 ft^2, and the rock riprap embankment area is approximately 1,360 ft^2 (170 linear feet).

Underneath the Blossom Hill Road bridge, galvanized gabion baskets have eroded, dislodging most of the stones into the channel. As a result, the remaining top baskets have buckled and shifted away from the adjacent maintenance road located under the bridge. Continued flows have worsened erosion conditions, significantly compromising the structural integrity of the maintenance road.

Project activities would include installation of an active dewatering system, debris removal, and replacing the failed gabion basket structure through the rock slope protection method, with two grade control features along the channel bed. Approximately 500 CY of rock riprap would be placed adjacent to the lower maintenance road, 10 CY of rock riprap for the grade control weirs, and 60 CY of channel fill between the grade control weirs. The riprap would largely match the contours of the existing gabion baskets. If necessary, resurfacing of the maintenance road would occur upon completion of the channel repairs, in addition to replacing the existing outer edge of the lower maintenance road with approximately 8 CY of concrete where it interfaces with the rock riprap throughout the length of the repair.

2.4.3 Active Dewatering System

Flows at the Malone Road Project site are mainly controlled by upstream dam summer operations, which is influenced by the amount of winter and spring rainfall totals. Historically this reach of the Guadalupe River is dry during the summer months, however the channel has experienced continuous flows during the summer months in recent history. In the event of similar wet conditions, these flows would be diverted by installing a sump pump in the trench with pipes, hoses, and an erosion dissipater and turbidity filter downstream. For the entirety of the Project duration, sump pumps would be installed approximately 50 feet upstream to divert any flows around the Project site as needed. Bypass hoses and/or pipes would be used for dewatering.

The dewatering system setup would comprise of two earthen cofferdams (approximately 30 CY of gravel bags each), two generators, and up to two 6-inch-to 10-inch sump pumps with approximately 700 feet of bypass pipes and hoses. Earthen cofferdams would be installed up and downstream of the Malone Road Project site, with pipes running through and under the temporary construction ramp and discharging flows. Generators would be placed along the top of the west bank.

The Blossom Hill Road Project site is also controlled by upstream dam operations and may experience running flows during summer months. As similar to the Malone Road Project site, the dewatering set up would include two earthen cofferdams (approximately 30 CY of gravel bags each) upstream and downstream of the Blossom Hill Road Project site, with pipes running through and under the center cell of the bridge to discharge flows downstream of the Project site. Groundwater encountered during excavation activities would be pumped into a Baker tank, or similar equipment, along the top of bank for containment prior to disposal.

2.4.4 Vegetation and Debris Removal

The Project site at Malone Road would require the removal of up to 15 trees (black walnut, Oregon ash, almond, Fremont cottonwood, weeping willow, California buckeye, and black locust) that range between 4 and 32 inches dbh for construction of the access ramp and construction of the concrete slope paving embankment. Valley Water would pay applicable Santa Clara Valley Habitat Plan (VHP) land cover fees as compensation to mitigate for any Project impacts on covered species and their habitats, including serpentine bunchgrass grassland, northern coastal scrub/Diablan sage scrub, and riverine habitats/land cover types.

2.4.5 Site Access and Staging Area

Construction vehicles and equipment would access the Malone Road Project site via Malone Road and Guadalupe River. Staging would be confined to Valley Water fee title properties along the top of the west bank upstream of Malone Road. A secondary staging area may be used upstream of Malone Road Project site to accommodate excess materials and equipment in the event the primary area is not sufficiently large enough. The proposed staging areas are shown in Figure 2.2-3 . There is currently no ramp access to Guadalupe River within the Malone Road Project site. Valley Water would, thus, import material to create two 100- to 110-foot-long temporary ramps on the west bank to create access to the channel from the vacant lot at top of the west bank.

Construction vehicles and equipment would access the Blossom Hill Road Project site along the west maintenance access road top of bank and north of the Blossom Hill Road bridge. The Blossom Hill Road Project site can also be accessed from the depressed maintenance road south of the Blossom Hill Road bridge. The proposed staging area is shown in Figure 2.2-2. Staging would be confined to a Valley Water fee title property along the top of the west bank (APN 458-14-034) downstream of Blossom Hill Road.

2.4.6 Site Preparation

Erosion and sediment control *best management practices* (BMPs) would be implemented prior to any action and would be maintained throughout construction *(*see "Best Management Practices," below*).* A project-specific Stormwater Pollution Prevention Plan (SWPPP) or amendment to an existing SWPPP is necessary because the total Project site is greater than 1 acre in size (1.83 acres). The Project would be required to adhere to National Pollutant Discharge Elimination System (NPDES) Order Number R2-2015-0049. Prior to beginning work, crews would install and implement construction site controls to prevent discharges of pollutants from the construction site.

2.4.7 Site Restoration

Following Project implementation, all work areas would be restored to pre-construction conditions. All construction material and debris would be removed and disposed of at approved facilities. Hydroseeding of all disturbed areas would be applied after construction and before seasonal rain events, with reapplication when necessary for winterization.

2.4.8 Equipment, Workers, And Truck Trips

Truck trips would include off-site material-hauling trips and employee commute trips between the Project sites and any off-site yards. The Project would require up to 300 truck trips to remove existing debris and bank materials at the Malone Road Project site and up to 150 truck trips to remove existing failed gabion baskets and haul new rock riprap at the Blossom Hill Road Project site. Typically, each site would be staffed with one foreman, four to five workers, one flagger, and one water trucker/sweeper. Equipment to be used under the Project is listed and broken down by Project activity in Table 2.4-1.

Table 2.4-1 Proposed Equipment Use Per Construction Phase

Project activity	Equipment	Amount
Concrete slab/gabion removal	Excavator	2
Concrete slab/gabion removal	Tractors/loaders/backhoes	4
Concrete slab/gabion removal	Dump trucks	10
Concrete slab/gabion removal	Water truck/sweeper	1
Concrete slab/gabion removal	Pickup trucks	4
Grading and excavation	Excavator	2
Grading and excavation	Tractors/loaders/backhoes	4
Grading and excavation	Dump trucks	10
Grading and excavation	Water truck/sweeper	1
Grading and excavation	Pickup trucks	4
Drainage, utilities, and subgrade	Excavator	2
Drainage, utilities, and subgrade	Tractors/loaders/backhoes	4
Drainage, utilities, and subgrade	Dump trucks	1
Drainage, utilities, and subgrade	Water truck/sweeper	1
Drainage, utilities, and subgrade	Pickup trucks	4
Finished grading	Excavator	2
Finished grading	Tractors/loaders/backhoes	4
Finished grading	Compactor	1
Finished grading	Truck-mounted crane	1
Finished grading	Concrete trucks	2
Finished grading	Concrete pumper	1
Finished grading	Pickup trucks	4

2.5 Schedule

Construction activities are anticipated to occur between June 15, 2026, and October 15, 2026, for approximately 4 months. Construction hours are anticipated to be from 7 a.m. to 7 p.m. Monday through Friday, in compliance with section 20.100.450 of the City of San José's Municipal Code. The construction timeframe would coincide with the historically dry summer months.

2.6 Operations and Maintenance

Upon completion, the Project is anticipated to have a useful lifespan of approximately 20 years. The Project would not require long-term vegetation maintenance; therefore, an Operations and Maintenance Plan is not applicable. Operations and maintenance activities required for the Project site would occur under Valley Water's SMP.

2.7 Environmental Protection Measures

2.7.1 Best Management Practices

BMPs are standard operating procedures to prevent, avoid, or minimize effects associated with construction and other activities. Valley Water routinely incorporates a wide range of BMPs into projects, as described in detail in the 2014 Best Management Practices Handbook (Valley Water 2014). The BMPs relevant to the Project are provided in Table 2.7-1. Additional Project-specific *avoidance and minimization measures* (AMMs) and mitigation measures were developed to reduce and mitigate impacts associated with Project implementation and not avoidable through standard construction BMPs are identified in Section 2.7.3 and throughout Section 3.4 of this IS/MND.

All Project BMPs would be incorporated into the Project's work plans, and all contractors employed on the Project would be required to adhere to them.

Table 2.7-1 Best Management Practices

Resource	BMP name	BMP conditions
Air Quality	**AQ-1** **Use Dust Control Measures**	The following Bay Area Air Quality Management District (BAAQMD) dust control measures would be implemented: 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. All visible mud or dirt track-out 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. 4. 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. 5. All vehicle speeds on unpaved roads shall be limited to 15 mph. 6. 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. 7. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations), and this requirement shall be clearly communicated to construction workers (such as verbiage in contracts and clear signage at all access points). 8. 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. 9. Correct tire inflation shall be maintained in accordance with manufacturer's specifications on wheeled equipment and vehicles to prevent excessive rolling resistance. 10. Post a publicly visible sign with a telephone number and contact person at the lead agency to address dust complaints; any complaints shall be responded to and take corrective action within 48 hours. In addition, a BAAQMD telephone number with any applicable regulations will be included.
Air Quality	**AQ-2** **Avoid Stockpiling Odorous Materials**	Materials with decaying organic material, or other potentially odorous materials, will be handled in a manner that avoids impacting residential areas and other sensitive receptors, including:

Resource	BMP name	BMP conditions
		• Avoid stockpiling potentially odorous materials within 1,000 feet of residential areas or other odor sensitive land uses; and • Odorous stockpiles will be disposed of at an appropriate landfill.
Biological Resources	**BI-3** **Remove Temporary Fill**	Temporary fill materials, such as for diversion structures or cofferdams, will be removed upon finishing the work or as appropriate. The creek channels and banks will be re-contoured to match pre-construction conditions to the extent possible. Low-flow channels within non-tidal streams will be contoured to facilitate fish passage and will emulate the pre-construction conditions as closely as possible, within the finished channel topography.
Biological Resources	**BI-5** **Avoid Impacts to Nesting Migratory Birds**	Nesting birds are protected by state and federal laws. The District will protect nesting birds and their nests from abandonment, loss, damage, or destruction. Nesting bird surveys will be performed by a qualified biologist prior to any activity that could result in the abandonment, loss, damage, or destruction of birds, bird nests, or nesting migratory birds. Inactive bird nests may be removed with the exception of raptor nests. Birds, nests with eggs, or nests with hatchlings will be left undisturbed.
Biological Resources	**BI-6** **Avoid Impacts to Nesting Migratory Birds from Pending Construction**	Nesting exclusion devices may be installed to prevent potential establishment or occurrence of nests in areas where construction activities would occur. All nesting exclusion devices will be maintained throughout the nesting season or until completion of work in an area makes the devices unnecessary. All exclusion devices will be removed and disposed of when work in the area is complete.
Biological Resources	**BI-8** **Choose Local Ecotypes Of Native Plants and Appropriate Erosion-Control Seed Mixes**	Whenever native species are prescribed for installation, the following steps will be taken by a qualified biologist or vegetation specialist: Evaluate whether the plant species currently grow wild in Santa Clara County, and if so, the qualified biologist or vegetation specialist will determine if any need to be local natives, i.e., grown from propagules collected in the same or adjacent watershed, and as close to the project site as feasible. Also, consult a qualified biologist or vegetation specialist to determine which seeding option is ecologically appropriate and effective, specifically: For areas that are disturbed, an erosion control seed mix may be used consistent with the Valley Water Guidelines and Standards for Land Use Near Streams, Design Guide 5, 'Temporary Erosion Control Options.' In areas with remnant native plants, the qualified biologist or vegetation specialist may choose an abiotic application instead,

Resource	BMP name	BMP conditions
		such as an erosion control blanket or seedless hydro-mulch and tackifier to facilitate passive revegetation of local native species. Temporary earthen access roads may be seeded when site and horticultural conditions are suitable. If a gravel or wood mulch has been used to prevent soil compaction, this material may be left in place [if ecologically appropriate] instead of seeding. Seed selection shall be ecologically appropriate as determined by a qualified biologist, per *Guidelines and Standards for Land Use Near Streams, Design Guide 2: Use of Local Native Species*.
Biological Resources	**BI-10** **Avoid Animal Entry and Entrapment**	All pipes, hoses, or similar structures less than 12 inches diameter will be closed or covered to prevent animal entry. All construction pipes, culverts, or similar structures, greater than 2-inches diameter, stored at a construction site overnight, will be inspected thoroughly for wildlife by a qualified biologist or properly trained construction personnel before the pipe is buried, capped, used, or moved. If inspection indicates presence of sensitive or state- or federally-listed species inside stored materials or equipment, work on those materials will cease until a qualified biologist determines the appropriate course of action. To prevent entrapment of animals, all excavations, steep-walled holes or trenches more than 6-inches deep will be secured against animal entry at the close of each day. Any of the following measures may be employed, depending on the size of the hole and method feasibility: Hole to be securely covered (no gaps) with plywood, or similar materials, at the close of each working day, or any time the opening will be left unattended for more than one hour; or In the absence of covers, the excavation will be provided with escape ramps constructed of earth or untreated wood, sloped no steeper than 2:1, and located no farther than 15 feet apart; or In situations where escape ramps are infeasible, the hole or trench will be surrounded by filter fabric fencing or a similar barrier with the bottom edge buried to prevent entry.
Biological Resources	**BI-11** **Minimize Predator-Attraction**	Remove trash daily from the worksite to avoid attracting potential predators to the site.
Cultural Resources	**CU-1**	If historical or unique archaeological artifacts, or tribal cultural resources, are accidentally discovered during construction, work in affected areas will be restricted or stopped until proper protocols are met. Work at the location of the find will halt immediately within 100 feet of the find. A “no work” zone shall be

Resource	BMP name	BMP conditions
	Accidental Discovery of Archaeological Artifacts or Burial Remains[1]	established utilizing appropriate flagging to delineate the boundary of this zone. A Consulting Archaeologist will visit the discovery site as soon as practicable for identification and evaluation pursuant to Section 21083.2 of the Public Resources Code and Section 15126.4 of the California Code of Regulations. If the archaeologist determines that the artifact or resource is not significant, construction may resume. If the archaeologist determines that the artifact or resource is significant, the archaeologist will determine if the artifact or resource can be avoided and, if so, will detail avoidance procedures. If the artifact cannot be avoided, the archaeologist will develop within 48 hours an Action Plan which will include provisions to minimize impacts and, if required, a Data Recovery Plan for recovery of artifacts in accordance with Public Resources Code section 21083.2 and section 15126.4 of the CEQA Guidelines. If a tribal cultural resource cannot be avoided, the Action Plan will include notification of the appropriate Native American tribe, and consultation with the tribe regarding acceptable recovery options. If burial finds are accidentally discovered during construction, work in affected areas will be restricted or stopped until proper protocols are met. Upon discovering any burial site as evidenced by human skeletal remains, the County Coroner will be immediately notified, and the field crew supervisor shall take immediate steps to secure and protect such remains from vandalism during periods when work crews are absent. No further excavation or disturbance within 100 feet of the site or any nearby area reasonably suspected to overlie adjacent remains may be made except as authorized by the County Coroner, California Native American Heritage Commission, and/or the County Coordinator of Indian Affairs.
Hazards and Hazardous Resources	**HM-7** **Restrict Vehicle and Equipment Cleaning to Appropriate Locations**	Vehicles and equipment may be washed only at approved areas. No washing of vehicles or equipment will occur at job sites.
Hazards and Hazardous Resources	**HM-8** **Ensure Proper Vehicle and Equipment Fueling and Maintenance**	No fueling or servicing will be done in a waterway or immediate flood plain, unless equipment stationed in these locations is not readily relocated (i.e., pumps, generators). For stationary equipment that must be fueled or serviced on-site, containment will be provided in such a manner that any

[1] Valley Water BMP CU-1 was updated to extend the no-work buffer zone from 30 feet to 100 feet if archeological artifacts, tribal cultural resources, or burial remains are encountered during construction.

Resource	BMP name	BMP conditions
		accidental spill will not be able to come in direct contact with soil, surface water, or the storm drainage system. All fueling or servicing done at the job site will provide containment to the degree that any spill will be unable to enter any waterway or damage riparian vegetation. All vehicles and equipment will be kept clean. Excessive build-up of oil and grease will be prevented. All equipment used in the creek channel will be inspected for leaks each day prior to initiation of work. Maintenance, repairs, or other necessary actions will be taken to prevent or repair leaks, prior to use. If emergency repairs are required in the field, only those repairs necessary to move equipment to a more secure location will be done in a channel or flood plain.
Hazards and Hazardous Resources	**HM-9** **Ensure Proper Hazardous Materials Management**	Measures will be implemented to ensure that hazardous materials are properly handled, and the quality of water resources is protected by all reasonable means. Prior to entering the work site, all field personnel will know how to respond when toxic materials are discovered. Contact of chemicals with precipitation will be minimized by storing chemicals in watertight containers with appropriate secondary containment to prevent any spillage or leakage. Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials will not contact soil and not be allowed to enter surface waters or the storm drainage system. All toxic materials, including waste disposal containers, will be covered when they are not in use, and located as far away as possible from a direct connection to the storm drainage system or surface water. Quantities of toxic materials, such as equipment fuels and lubricants, will be stored with secondary containment that is capable of containing 110% of the primary container(s). The discharge of any hazardous or non-hazardous waste as defined in Division 2, Subdivision 1, Chapter 2 of the California Code of Regulations will be conducted in accordance with applicable state and federal regulations. In the event of any hazardous material emergencies or spills, personnel will call the Chemical Emergencies/Spills Hotline at 1-800-510-5151.

Resource	BMP name	BMP conditions
Hazards and Hazardous Resources	**HM-10** **Utilize Spill Prevention Measures**	Prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water following these measures: 1. Field personnel will be appropriately trained in spill prevention, hazardous material control, and clean-up of accidental spills; 2. Equipment and materials for clean-up of spills will be available on site, and spills and leaks will be cleaned up immediately and disposed of according to applicable regulatory requirements; 3. Field personnel will ensure that hazardous materials are properly handled, and natural resources are protected by all reasonable means; 4. Spill prevention kits will always be in close proximity when using hazardous materials (e.g., at crew trucks and other logical locations), and all field personnel will be advised of these locations; and, 5. The work site will be routinely inspected to verify that spill prevention and response measures are properly implemented and maintained.
Hazards and Hazardous Resources	**HM-12** **Incorporate Fire Prevention Measures**	All earthmoving and portable equipment with internal combustion engines will be equipped with spark arrestors. During the high fire danger period (April 1–December 1), work crews will have appropriate fire suppression equipment available at the work site. An extinguisher shall be available at the project site at all times when welding or other repair activities that can generate sparks (such as metal grinding) is occurring. Smoking shall be prohibited except in designated staging areas and at least 20 feet from any combustible chemicals or vegetation.
Hazards and Hazardous Resources	**HM-13** **Avoid Impacts from Naturally Occurring Asbestos**	The District will comply with and implement BAAQMD dust control measures and notification requirements when working in serpentine soils.
Hydrology and Water Quality	**WQ-4** **Limit Impacts from Staging and Stockpiling Materials**	1. To protect on-site vegetation and water quality, staging areas should occur on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation. Similarly, all equipment and materials (e.g., road rock and project spoil) will be contained within the existing service roads, paved roads, or other pre-determined staging areas. 2. Building materials and other project-related materials, including chemicals and sediment, will not be stockpiled or

Resource	BMP name	BMP conditions
		stored where they could spill into water bodies or storm drains. 3. No runoff from the staging areas may be allowed to enter water ways, including the creek channel or storm drains, without being subjected to adequate filtration (e.g., vegetated buffer, swale, hay wattles or bales, silt screens). 4. The discharge of decant water to water ways from any on-site temporary sediment stockpile or storage areas is prohibited. 5. During the wet season, no stockpiled soils will remain exposed, unless surrounded by properly installed and maintained silt fencing or other means of erosion control. During the dry season; exposed, dry stockpiles will be watered, enclosed, covered, or sprayed with non-toxic soil stabilizers.
Hydrology and Water Quality	**WQ-5** **Stabilize Construction Entrances and Exits**	Measures will be implemented to minimize soil from being tracked onto streets near work sites: • Methods used to prevent mud from being tracked out of work sites onto roadways include installing a layer of geotextile mat, followed by a 4-inch-thick layer of 1 to 3-inch diameter gravel on unsurfaced access roads. Access will be provided as close to the work area as possible, using existing ramps where available and planning work site access so as to minimize disturbance to the water body bed and banks, and the surrounding land uses.
Hydrology and Water Quality	**WQ-9** **Use Seeding for Erosion Control, Weed Suppression, and Site Improvement**	Disturbed areas shall be seeded with native seed as soon as is appropriate after activities are complete. An erosion control seed mix will be applied to exposed soils down to the ordinary high-water mark (OHWM)in streams. 1. The seed mix should consist of California native grasses, (for example *Hordeum brachyantherum*, *Elymus glaucus*, and annual *Vulpia microstachyes*) or annual, sterile hybrid seed mix (e.g., *Regreen*™, a wheat x wheatgrass hybrid). Temporary earthen access roads may be seeded when site and horticultural conditions are suitable or have other appropriate erosion control measures in place.
Hydrology and Water Quality	**WQ-11** **Maintain Clean Conditions at Work Sites**	The work site, areas adjacent to the work site, and access roads will be maintained in an orderly condition, free and clear from debris and discarded materials on a daily basis. Personnel will not sweep, grade, or flush surplus materials, rubbish, debris, or dust into storm drains or waterways. For activities that last more than one day, materials or equipment left on the site overnight will be stored as inconspicuously as possible and will be neatly arranged. Any materials and

Resource	BMP name	BMP conditions
		equipment left on the site overnight will be stored to avoid erosion, leaks, or other potential impacts to water quality Upon completion of work, all building materials, debris, unused materials, concrete forms, and other construction-related materials will be removed from the work site.
Hydrology and Water Quality	**WQ-15** **Prevent Water Pollution**	Oily, greasy, or sediment laden substances or other material that originate from the project operations and may degrade the quality of surface water or adversely affect aquatic life, fish, or wildlife will not be allowed to enter, or be placed where they may later enter, any waterway. The project will not increase the turbidity of any watercourse flowing past the construction site by taking all necessary precautions to limit the increase in turbidity as follows: 1. where natural turbidity is between 0 and 50 Nephelometric Turbidity Units (NTU), increases will not exceed 5 percent; 2. where natural turbidity is greater than 50 NTU, increases will not exceed 10 percent; 3. where the receiving water body is a dry creek bed or storm drain, waters in excess of 50 NTU will not be discharged from the project. Water turbidity changes will be monitored. The discharge water measurements will be made at the point where the discharge water exits the water control system for tidal sites and 100 feet downstream of the discharge point for non-tidal sites. Natural watercourse turbidity measurements will be made in the receiving water 100 feet upstream of the discharge site. Natural watercourse turbidity measurements will be made prior to initiation of project discharges, preferably at least 2 days prior to commencement of operations.
Hydrology and Water Quality	**WQ-16** **Prevent Stormwater Pollution**	Suitable erosion control, sediment control, source control, treatment control, material management, and non-stormwater management BMPs will be implemented consistent with the latest edition of the California Stormwater Quality Association "Stormwater Best Management Practices Handbook," which is available at www.cabmphandbooks.com. To prevent stormwater pollution, the applicable measures from the following list will be implemented: Soils exposed due to project activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. In creeks, the channel bed and areas below the OHWM are exempt from this BMP.

Resource	BMP name	BMP conditions
		Erosion control fabrics will consist of natural fibers. No non-porous fabric will be used as part of a permanent erosion control approach. Plastic sheeting may be used to temporarily protect a slope from runoff, but only if there are no indications that special-status species would be impacted by the application. Erosion control measures will be installed according to manufacturer's specifications. To prevent stormwater pollution, the appropriate measures from, but not limited to, the following list will be implemented: • Silt Fences • Straw Bale Barriers • Brush or Rock Filters • Storm Drain Inlet Protection • Sediment Traps or Sediment Basins • Erosion Control Blankets and/or Mats • Soil Stabilization (i.e., tackified straw with seed, jute blankets, etc.) • Straw mulch. All temporary construction-related erosion control methods shall be removed at the completion of the project (e.g., silt fences). Surface barrier applications installed as a method of animal conflict management, such as chain link fencing, woven geotextiles, and other similar materials, will be installed no longer than 300 feet, with at least an equal amount of open area prior to another linear installation.
Hydrology and Water Quality	**WQ-17** **Manage Sanitary and Septic Waste**	Temporary sanitary facilities will be located on jobs that last multiple days, in compliance with California Division of Occupational Safety and Health (Cal/OSHA) regulation 8 California Code of Regulations 1526. All temporary sanitary facilities will be located where overflow or spillage will not enter a watercourse directly (overbank) or indirectly (through a storm drain).
Transportation	**TR-1** **Incorporate Public Safety Measures**	Fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction, to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof.

2.7.2 Santa Clara Valley Habitat Plan/Natural Community Conservation Planning

Proposed work is within the VHP area, and work is covered by the VHP. The VHP is a joint habitat conservation and natural communities conservation plan developed to serve as the basis for incidental take permits and authorizations pursuant to Section 10 of the federal Endangered

Species Act (ESA) and the California Natural Community Conservation Planning Act (SCVHA 2012). Valley Water would adhere to the following VHP conditions, which are further described in Table 2.7-2:

- **Condition 1**: Avoid Direct Impacts on Legally Protected Plant and Wildlife Species
- **Condition 3:** Maintain Hydrologic Conditions and Protect Water Quality[2]
- **Condition 4:** Avoidance and Minimization for In-Stream Projects
- **Condition 5**: Avoidance and Minimization Measures for In-Stream Operations and Maintenance
- **Condition 19**: Plant Salvage when Impacts are Unavoidable
- **Condition 20:** Avoid and Minimize Impacts to Covered Plant Occurrences

Table 2.7-2 Santa Clara Valley Habitat Plan Conditions

Condition	Description
Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species	Contra Costa goldfields is a federally endangered and California Native Plant Society (CNPS) 1B plant species whose extreme rarity precludes coverage under the Habitat Plan. Because the Habitat Plan does not cover the species, compliance is required on an individual basis. Several wildlife species that occur in the study area are listed as fully protected, as defined under Sections 3511 and 4700 of the California Fish and Game Code. As described in Chapter 1, CDFG cannot issue permits for take. • Golden eagle. • of these species. • Fully protected species that are known or likely to occur in the study area are listed below. • Bald eagle. • American peregrine falcon. • Southern bald eagle. • White-tailed kite. • California condor. • Ring-tailed cat (= ringtail). All migratory bird species and their nests are protected under the Migratory Bird Treaty Act (MBTA).
Condition 3. Maintain Hydrologic Conditions and Protect Water Quality	Protect water quality by preventing and reducing the adverse impacts of stormwater pollutants and increases in peak runoff rate and volume.

[2] Note that compliance with this measure necessitates implementation of measures listed in Chapter 6 of the VHP (http://scv-habitatagency.org/178/Final-Habitat-Plan); these measures are BMPs to protect water quality and avoid other adverse effects, and many overlap or are similar to Valley Water's BMPs.

Condition	Description
Condition 4, Avoidance and Minimization for In-Stream Projects	Identify design requirements and construction practices for in-stream projects to minimize impacts on riparian and aquatic habitat.
Condition 5. Avoidance and Minimization Measures for In-Stream Operations and Maintenance	Identify and apply appropriate AMMs to reduce impacts on stream and riparian land cover types and covered species when conducting operations and maintenance activities.
Condition 19. Plant Salvage when Impacts are Unavoidable	Where impacts on covered plant species cannot be avoided and plants will be removed by approved covered activities, the Implementing Entity has the option of salvaging the covered plants. Salvage of covered plants is conducted in addition to mitigation that may be required for impacts on covered plants.
Condition 20. Avoid and Minimize Impacts to Covered Plant Occurrences	In order to reduce impacts to covered plants, all covered activities will be confined to the minimum area necessary to complete the activity or construction.

2.7.3 Avoidance and Minimization Measures

AMMs are measures to prevent, avoid, or minimize potentially adverse effects on resources (e.g., cultural, biological, water) associated with construction and other activities. Because the BMPs from Valley Water's Best Management Practices Handbook are standardized and intended to apply to a broad range of projects and activities, Valley Water has tailored several of the standardized BMPs to apply more directly to the Project. To differentiate them from the standard BMPs, these modified measures are identified as Project-specific AMMs; however, similar to the standard BMPs, AMMs would be implemented as part of the Project design and are therefore not considered mitigation.

Accordingly, and in addition to the Valley Water BMPs and VHP Conditions listed above, Valley Water would incorporate the Project-specific AMMs provided in the list below to avoid or minimize potential adverse environmental effects.

All AMMs for proposed Project implementation activities would be incorporated into the Project's work plans, and all contractors employed on the proposed Project would be required to adhere to them. Additional environmental measures developed to mitigate specific impacts associated with proposed Project implementation and not avoidable through standard construction BMPs or AMMs are further detailed in Section 3 of this IS/MND.

Table 2.7-3 Project-specific Avoidance and Minimization Measures

AMM	Description
AMM – BIO-1: Phytophthoras in Native Habitats	All tools, equipment, and clothing and shoes must be sanitized before entering sensitive natural areas. Prior to beginning work, obtain a sanitizing agent from a Valley Water Botanist.
AMM – CR-1: Pre-construction Worker Awareness Training	All earthmoving construction personnel will receive cultural sensitivity awareness training that includes information on the possibility of encountering tribal cultural resources during construction, the types of artifacts likely to be seen based on finds in the site vicinity, and the proper procedures in the event tribal cultural resources are encountered. Worker training will be prepared and presented by a qualified archaeologist with appropriate experience and expertise in teaching non-specialists. The awareness training will be conducted on site at the start of construction and thereafter as required for new construction personnel.
AMM – GEN- 1: Minimize the Area of Disturbance	To minimize impacts to natural resources, soil disturbance will be kept to the minimum footprint necessary to complete the maintenance operation.
AMM – GEN- 2: Erosion and Sediment Control Measures	1. Soils exposed due to maintenance activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. The channel bed and areas below the OHWM are exempt from this BMP. 2. The preference for erosion control fabrics will be to consist of natural fibers; however, steeper slopes and areas that are highly erodible may require more structured erosion control methods. No non-porous fabric will be used as part of a permanent erosion control approach. Plastic sheeting may be used to temporarily protect a slope from runoff but only if there are no indications that special status species would be impacted by the application. 3. Erosion control measures will be installed according to manufacturer's specifications. 4. Appropriate measures include, but are not limited to, the following: a. Silt Fences b. Straw Bale Barriers c. Brush or Rock Filters d. Storm Drain Inlet Protection e. Sediment Traps f. Sediment Basins g. Erosion Control Blankets and Mats h. Soil Stabilization (i.e. tackified straw with seed, jute or geotextile blankets, etc.) i. Wood chips j. Straw mulch k. All temporary construction-related erosion control methods shall be removed at the completion of the project (e.g. silt fences).

3 Environmental Evaluation

3.1 Environmental Checklist

Topic	Description
Project title	Guadalupe River Bank Stabilization Project: Malone Road and Blossom Hill Road
Lead Agency name and address	Santa Clara Valley Water District 570 Almaden Expressway San Jose, CA 95118
Contact person	Lawrence Truong, Associate Environmental Planner (408) 630-2916
Project location	Santa Clara County, City of San Jose, along the Guadalupe River crossing upstream of Malone Road (APNs 456-09-003 and 456-18-001), and the Guadalupe River crossing located at Blossom Hill Road (APN 458-14-034).
Project sponsor's name and address	Santa Clara Valley Water District 570 Almaden Expressway San Jose, CA 95118
General Plan description	OSPH under the City of San José 2040 General Plan (City of San José 2011)
Zoning	Malone Road (APNs 456-09-003, 456-187-001, 456-09-002: Single-family Residential (up to five dwelling units per acre) and Single-family Residential (up to eight dwelling units per acre) Blossom Hill Road (APN 458-14-034): High Industrial and Planned Development

Topic	Description
Description of the Project	Valley Water is proposing the Guadalupe River Bank Stabilization Project (Project). The Project would involve bank stabilization at two crossings along the Guadalupe River, at Malone Road and Blossom Hill Road, where in-stream structures have been significantly eroded and subsequent damage has occurred at the embankment, posing a risk of impacts to neighboring properties. The Project would consist of repairs to address the existing broken concrete-lined channel and failed gabion baskets and would include the removal of vegetation and trees. The repairs would span approximately 410 linear feet along the length of the channel. After Project completion, there would be no required operation and maintenance activities; thus, operational impacts are not discussed in each section. Operation and maintenance activities required for the Project site would occur under Valley Water's SMP. Please see Section 2, Project Description, for additional information.
Surrounding land uses and setting	The proposed Project is within the City of San José, on undeveloped land along the Guadalupe River. Soils at the Blossom Hill work area are categorized as Urban land — Landelspark complex, 0 to 2 percent slopes. Soils at the Malone Road work area are categorized Urban land - Still complex, 0 to 2 percent slopes, and Urban land — Elpaloalto complex, 0 to 2 percent slopes. Residential areas are adjacent to the work areas.
Other public agencies whose ministerial or discretionary approval may be required	• Santa Clara Valley Habitat Agency • California Department of Fish and Wildlife (CDFW) • California Regional Water Quality Control Board (RWQCB) • Army Corps of Engineers (USACE)
Tribal coordination	Valley Water emailed and mailed Project notification letters describing the Project and location and offering the opportunity of AB 52 consultation to Tribal Chair Charlene Nijmeh of the Muwekma Ohlone Indian Tribe and Chairwoman Quirina Luna Geary of Tamien Nation on October 3, 2024. No request for consultation was received within or after the 30-day response period from the Muwekma Ohlone Indian Tribe. Tamien Nation emailed Valley Water on October 10, 2024, to request a consultation. Valley Water had a meeting with Tamien Nation about the Project via Microsoft Teams on November 26, 2024. Valley Water emailed Tamien Nation requested Project information on December 2, 2024. Valley Water sent follow up emails to Tamien Nation on December 11, 2024 and December 19, 2024, making itself available for any follow up and no further follow up was requested.

3.2 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the Project, as indicated by the checklist and described on the following pages.

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

3.3 Determination

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable

standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Lawrence Truong — June 26, 2025

Signature — Date

Lawrence Truong
Associate Environmental Planner
Santa Clara Valley Water District

3.4 Evaluation of Environmental Impacts

3.4.1 Aesthetics

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☑	☐
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☑	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

Environmental Setting

The two Project sites are located within the City of San José. The existing visual character of the river crossings consists primarily of vegetated areas within open space areas surrounded by residential uses and urban development. There is one eligible scenic highway that traverses the City of San José, Route 280; however, Route 280 is not located in the vicinity of the Project sites (Caltrans 2021). Vegetation types within the Project sites include coyote brush, red willow, Chinese pistache, invasive fig, invasive black locust, poison oak, invasive ash, and invasive walnut, portions of which would be removed under the Project for access and repair activities. Existing views of the Project sites and vicinity are restricted to occasional observation from nearby residential properties and from isolated observation points along the neighboring roadways.

Discussion

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

No Impact. The proposed Project activities would not occur near or be visible from a scenic vista or designated scenic highway. Therefore, the proposed Project would not impact a scenic vista or designated scenic highway.

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

Less than Significant Impact. There are no designated scenic resources, such as wild and scenic rivers or scenic highways, in the vicinity of either Project site. As stated above, both Project sites are located in predominately open space areas but are only casually visible, due to topography, and are surrounded by residential uses and urban development. Route 280, the nearest eligible scenic highway to either Project site, is approximately 4 miles from the Malone Road Project site and 6 miles from the Blossom Hill Road Project site (Caltrans 2021). Construction at the Blossom Hill Road Project site is approximately 0.06 mile from Sánchez Ponds, 0.10 mile from the Los Alamitos Percolation Ponds, 0.50 mile from the Almaden Lake Park. The proposed Project work is limited, and the aforementioned ponds and lake have limited views of the Project sites. Project work would not impact the visual character of the ponds or lake.

The Project would result in the removal of up to 15 trees as well as vegetation, including invasive species. Valley Water would revegetate any graded areas with native vegetation. Valley Water would recontour the work areas following completion of proposed maintenance and repair, returning each Project site to its previous aesthetic condition. The Project would thus not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings. Therefore, impacts would be less than significant.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact. Both Project sites are located in open space areas surrounded by residential uses and urban development. As there is no public access at either Project site, visibility of the Project would be limited. The construction schedule would span June 15, 2026, through October 15, 2026, totaling 4 months, with minimal equipment needed. Due to the proposed Project's localized scale, any impacts from degradation to visual character or quality of public views, such as tree removal or temporary views of construction equipment, would not be significant. Valley Water would restore each Project site to its previous aesthetic condition upon completion of the Project.

The proposed Project would not otherwise conflict with the County of Santa Clara or City of San José policies pertaining to scenic resources and would not substantially degrade the existing visual character or quality of public views of the Project sites and their surroundings. Therefore, impacts would be less than significant.

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

Less than Significant Impact. Existing sources of light and glare in the vicinity of the Project sites include streetlights located along roads, headlights from vehicles traveling at nighttime, and glare from sunlight reflecting off passing or parked vehicles as well as rooftops and sides of

surrounding buildings. Further, the Blossom Hill Road Project site, specifically, may experience light and glare from the surrounding urban development.

Because the proposed Project's construction activities would occur during daylight hours, temporary construction lighting equipment would not be necessary. Project construction would include typical construction equipment (e.g., excavator, tractors/loaders/backhoes, dump trucks, water truck/sweeper, pickup trucks) that could create some glare in the immediate vicinity of the Project sites; however, any glare resulting from Project activities would not be substantial and would be temporary. The Project would not result in any new permanent sources of light or glare. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

3.4.2 Agriculture and Forestry

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☑
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?	☐	☐	☐	☑
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

Environmental Setting

The proposed Project sites are located on Valley Water fee title or easement property. Adjacent residential neighborhoods and urban development surround both Project sites. The Malone Road Project site is zoned Single-family Residential (up to five dwelling units per acre) and Single-family Residential (up to eight dwelling units per acre). The Blossom Hill Road Project site is zoned High Industrial and Planned Development and is located approximately 0.50 mile from Almaden Lake Park. The overall Project site is approximately 0.80 mile from the western end of the Santa Teresa Hills. The Project sites are categorized as Open Space, Parklands and Habitat (OSPH), under the City of San José 2040 General Plan and are bounded by residences and urban development (City of San José 2011) . No lands in the vicinity of the Project sites are mapped as important farmland or under a Williamson Act Contract (CDOC 2016; CDOC n.d.).

Discussion

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. There is no Prime Farmland, Farmland of Statewide Importance, or Unique Farmland within the vicinity of either of the Project site (CDOC 2016). Therefore, the Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and no impact would occur.

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

No Impact. Work would not occur within a Williamson Act contract parcel or in an area zoned for agricultural use (CDOC n.d.). Additionally, Project activities would not alter the existing land use such as to conflict with existing zoning. Therefore, no impact would occur.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. As discussed in Section 2.2, Project Location, the Project site is categorized as OSPH under the City of San José 2040 General Plan (City of San José 2011). Accordingly, the Project sites are not located within forest land, timberland, or timberland zoned Timberland Production. Therefore, no impact would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The Project sites are not located within forest land. Therefore, no impact would occur.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. See discussions under Impact a, c, and d in this section. Proposed Project activities would not involve changes to the existing environment that could result in conversion of farmland to non-agricultural use. Therefore, no impact would occur.

Mitigation Measures

No mitigation measures would be required.

3.4.3 Air Quality

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☑	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☑	☐

The air quality analysis includes a review of criteria pollutant[3] emissions such as carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), volatile organic compounds (VOC) as reactive organic gases (ROG), particulate matter less than 10 micrometers (coarse particulate, or PM_{10}), and particulate matter less than 2.5 micrometers (fine particulate, or $PM_{2.5}$).

Environmental Setting

The proposed Project sites are located within the San Francisco Bay Area Air Basin (SFBAAB), which encompasses Santa Clara, San Mateo, Marin, Napa, Contra Costa, and Alameda counties. Santa Clara County, which includes the City of San José, is located entirely within the SFBAAB. The BAAQMD manages air quality in the SFBAAB and is the regional agency primarily responsible for monitoring pollutant concentrations and regulating pollutant emissions. BAAQMD has permitting authority over stationary sources of air emissions and prepares air

[3] 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 CAA.

quality management plans to improve air quality in the basin and achieve state and federal air quality standards. The SFBAAB is currently designated "nonattainment" for state and national (1-hour and 8-hour) ozone standards, for state PM_{10} standards, and for state and national (annual average and 24-hour) $PM_{2.5}$ standards. The SFBAAB is designated "attainment" or "unclassifiable" with respect to the other ambient air quality standards.

Adjacent residential neighborhoods and urban development surround both Project sites. The nearest residences to the Malone Road Project site surround the site at a distance of approximately 50 feet along Malone Road and Almaden Road (from the upstream Cofferdam with Sump Pump). The nearest residences to the Blossom Hill Road Project site are approximately 450 feet northeast along Blossom River Drive (from the temporary cofferdam). The Avana Almaden Apartments are also located 760 feet northwest of the Project site.

Discussion

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

Less than Significant Impact. Air quality plan refers to any clean air plan, ozone plan, or other air quality management plan developed by BAAQMD. The most recent clean air plan adopted by BAAQMD is the 2017 Clean Air Plan, which includes a wide range of control measures designed to decrease emissions of air pollutants such as particulate matter, ozone, and toxic air contaminants; reduce GHG emissions of methane and other "super-GHG" in the near term; and decrease GHG emissions by reducing fossil fuel combustion in the long-term (BAAQMD 2017).

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 is concluded in the negative, the BAAQMD considers the project consistent with the air quality plan prepared for the SFBAAB.

The federal Clean Air Act (CAA) requires air districts to create a clean air plan that describes how the jurisdiction will meet air quality standards. These plans must be updated periodically. As stated, the most recently adopted air quality plan for the SFBAAB is the 2017 Clean Air Plan. To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors and reduce the transport of ozone and its precursors to neighboring air basins. In addition, the 2017 Clean Air Plan builds upon and enhances BAAQMD's efforts to reduce emissions of fine particulates and air toxics. The 2017 Clean Air Plan does not include control measures that apply directly to individual development projects. Rather, the control strategy includes measures related to mobile sources, stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-greenhouse gas (GHG) pollutants (BAAQMD 2017).

The Project includes applicable control measures from the 2017 Clean Air Plan and would not disrupt or hinder implementation of the 2017 Clean Air Plan control measures.

> *Mobile Source Measures*. These measures promote lower emission vehicles and equipment. These measures are aimed at reducing ozone precursor emissions (ROGs and NOx) from mobile sources. Consistent with the California Airborne Toxic Control Measure (Title 13, Section 2485 of the CCR), implementation of Valley Water standard BMP AQ-1 (BAAQMD Dust Control Measures) would limit construction vehicle idling to 5 minutes or less. The Project would also implement the use of Tier 4 emission standards (MM AQ-2) reducing emissions due to construction equipment and vehicles. Thus, applicable control measures are included in the Project and the Project would not disrupt or hinder implementation of any Mobile Source Measures.
>
> *Stationary Source Control Measures*. The Stationary Source Control Measures aim to protect public health by reducing emissions of criteria pollutants and TACs. Stationary Source Control Measure 32 (SS32), Emergency Backup Generators, is aimed at reducing emissions of diesel PM from backup generators. The Project does not contain emergency backup generators or other stationary sources; therefore, the Stationary Source Control Measures do not apply.
>
> *Land Use and Local Impacts Measures*. These measures are aimed at promoting mixed-use, infill development to reduce vehicle travel and emission, as well as protecting people from exposure to air pollution from stationary and mobile sources of emissions. The Land Use and Local Impacts Measures do not apply to the Project because the Project is not a land use development project, would have no effect on land use, and would not induce growth. In addition, the Project would not disrupt or hinder implementation of any Land Use and Local Impacts Measures.

A project that would not support the 2017 Clean Air Plan's goals would not be considered consistent with the plan. On an individual project basis, consistency with BAAQMD's quantitative thresholds is interpreted as demonstrating support for the 2017 Clean Air Plan's goals. As shown in the discussion under Impact b, the proposed Project would not result in exceedances of BAAQMD's thresholds for criteria air pollutants and thus would not conflict with the 2017 Clean Air Plan's goal to attain air quality standards. Further, the proposed Project would not result in new land use development that would increase regional emissions sources (e.g., vehicular exhaust, area wide source). Because the proposed Project only involves construction activities, some of which require the use of trucks and heavy equipment for short periods of time over the course of approximately 4 months, no operational impact analysis is required. Therefore, the proposed Project would not conflict with the adopted Clean Air Plan.

Additionally, the proposed Project would support the primary goals of the 2017 Clean Air Plan because the Project's construction emissions are below the BAAQMD CEQA significance thresholds (see Impact b). Accordingly, implementation of the Project would not disrupt implementation of the 2017 Clean Air Plan. Therefore, impacts would be less than significant.

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

Less than Significant Impact with Mitigation Incorporated. To determine if the proposed Project would result in a cumulatively considerable net increase of any criteria pollutant for which the region is nonattainment under an applicable federal or state ambient air quality standards, the Project's construction emissions were estimated utilizing the CalEEMod (CAPCOA 2022). The estimated construction emissions were then compared to the BAAQMD CEQA significance thresholds.

During Project construction, the use of heavy construction equipment, truck trips from hauling materials, and truck trips from construction workers traveling to and from the Project sites would emit air pollutants for which the SFBAAB is nonattainment as follows:

- Mobile-source emissions, primarily NO_x, would be generated by equipment such as excavators, bulldozers, loaders, and graders during demolition and excavation activities.
- Paving operations would release fugitive ROG.
- Construction activities would also generate fugitive dust that could contribute particulate matter into the local atmosphere.

Per BAAQMD's *CEQA Air Quality Guidelines*, the reported PM_{10} and $PM_{2.5}$ emissions are those related to combustion exhaust only (BAAQMD 2022). Fugitive dust emissions would be addressed via implementation of BMP AQ-1 and MM AQ-1 per BAAQMD's *CEQA Air Quality Guidelines* (Table 5-2) and Valley Water BMPs**.**

Table 3.4-1 provides the estimated short-term construction emissions that would result from the Project. The average daily construction emissions (i.e., total construction period emissions divided by the number of actual construction days) were compared to the BAAQMD significance thresholds. With implementation of BMP AQ-1 and MM AQ-1, all construction-related emissions would fall below the BAAQMD significance thresholds. Therefore, impacts would be less than significant with mitigation.

As discussed in Impact c, the health risk assessment (HRA) would additionally require implementation of MM AQ-2 to reduce the health impacts to less than significant. Therefore, Table 3.4-1 incorporates MM AQ-1 and as well as MM AQ-2 into the construction emissions inventory**.** Due to control technologies implemented in accordance with MM AQ-1 and MM AQ-2 that are focused on reducing ROG, NOx, PM_{10}, and $PM_{2.5}$ emissions, mitigated CO emissions would be greater than the unmitigated CO emissions as those control technologies increase CO emissions.

Table 3.4-1 Construction Related Pollutant Emissions

Project	Pollutant emissions (pounds/day)				
	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO
Unmitigated					
Blossom Hill Road	3.07	27.2	0.84	0.77	31.7
Malone Road	3.08	27.7	0.85	0.78	32.0
Project total	**6.14**	**54.9**	**1.69**	**1.55**	**63.7**
Significance threshold	54	54	82	54	—
Significant? (yes or no)	No	No	No	No	No
Mitigated					
Blossom Hill Road	0.82	15.2	0.14	0.13	40.5
Malone Road	0.83	15.8	0.15	0.14	40.8
Project total	**1.66**	**31.0**	**0.29**	**0.27**	**81.3**
Significance threshold	54	54	82	54	—
Significant? (yes or no)	No	No	No	No	No

Note: BAAQMD does not have construction screening thresholds for either CO or SO_2.

Source: Valley Water Guadalupe River Bank Stabilization Air Quality Technical Report (RCH Group 2024a)

In accordance with BMP AQ-1 (Use Dust Control Measures), idling times would be minimized by either shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure, title 13 section 2485 of California Code of Regulations). Clear signage would be provided for construction workers at all access points. All construction equipment would be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment would be checked by a certified mechanic and determined to be running in proper condition prior to operation.

The proposed 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 (e.g., trackout control devices) to minimize trackout.

Using standard fuel consumption estimates, construction activities would require approximately 58,560 gallons of diesel fuel per year (haul trucks and offroad equipment) (CAPCOA n.d.)[4]

Accordingly, with implementation of BMPs and adherence to regulatory requirements and MM AQ-1, impacts would be less than significant with mitigation.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact with Mitigation Incorporated. For purposes of CEQA, BAAQMD considers a sensitive receptor to be land use associated with those segments of the population most susceptible to poor air quality: children, the elderly, and those with pre-existing serious health problems affected by air quality. Examples include residences, schools and school yards, parks and playgrounds, daycare centers, nursing homes, and medical facilities. BAAQMD considers the relevant zone of influence for an assessment of air quality health risks to be the area within 1,000 feet of a Project site.

Adjacent residential neighborhoods and urban development surround both Project sites. The nearest residences to the Malone Road Project site surround the site at a distance of approximately 50 feet along Malone Road and Almaden Road (from the upstream cofferdam with sump pump). The nearest residences to the Blossom Hill Road Project site are approximately 450 feet northeast along Blossom River Drive (from the temporary cofferdam). The Avana Almaden Apartments are also located 760 feet to the northwest of the Project site. Other sensitive land uses are located further from the Project sites and would experience less significant impacts to air quality.

Because of the potential for sensitive receptors to occur within 1,000 feet of the Project sites, an HRA was conducted following methodologies in California Office of Environmental Health Hazard Assessment (OEHHA)'s *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015). Estimated emissions concentrations at the receptors were analyzed to the established cancer risk estimates and acceptable reference concentrations for non-cancer health effects.

The proposed Project would constitute a new emission source of diesel particulate matter (DPM) and $PM_{2.5}$ due to construction activities. Studies have demonstrated that DPM from

[4] Fuel usage is estimated using the CalEEMod output for CO2 and a 10.19 kgCO2/gallon (diesel) conversion factor, https://www.eia.gov/environment/emissions/co2_vol_mass.php

diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk.

Health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. Individual cancer risk is the likelihood that a person exposed to air toxic concentrations over a 70-year lifetime would contract cancer, based on the use of standard risk-assessment methodology. The maximally exposed individual residence (MEIR) represents the worst–case risk estimate, based on a theoretical person continuously exposed for a lifetime at the point of highest compound concentration in the air. This is a highly conservative assumption since most people do not remain at home all day and, on average, residents change residences every 11 to 12 years. In addition, this assumption assumes that residents are experiencing outdoor concentrations for the entire exposure period.

The HRA analyzes the incremental cancer risks to sensitive receptors in the vicinity of the Project sites using emission rates (in pounds per hour) from the construction emissions inventory. DPM (reported as combustion exhaust emissions of $PM_{2.5}$) emission rates were input into the USEPA's AERMOD atmospheric dispersion model to calculate ambient air concentrations of DPM at receptors in the Project vicinity.

For the Malone Road Project site, the nearest residences are located approximately 50 feet surrounding the site along Malone Road and Almaden Road, therefore the MEIR is consistent and interchangeable among these residences (RCH Group 2024a). For the Malone Road Project site, the maximum cancer risk from unmitigated construction emissions for a residential-adult receptor would be 1.74 per million and, for a residential-child receptor, would be 38.8 per million at the MEIR. Thus, the cancer risk due to unmitigated construction activities are greater than the BAAQMD significance threshold of 10 per million, and the impact would be potentially significant.

However, the maximum cancer risk from mitigated construction emissions for a residential-adult receptor would be 0.31 per million and for a residential-child receptor would be 6.97 per million. Thus, the cancer risk due to mitigated construction activities are less than the BAAQMD significance threshold of 10 per million. Implementation of MM AQ-2 would reduce cancer risks related to the Project's construction activities from 38.8 to 6.97 per million, less than the BAAQMD significance threshold of 10 per million. Thus, the Project exposing sensitive receptors to substantial pollutant concentrations at the Malone Road Project site is less than significant impact with mitigation.

For the Blossom Hill Road Project site, the MEIR is located within the Avana Almaden Apartments to the northwest of the Project site (RCH Group 2024). In this area the maximum cancer risk from unmitigated construction emissions for a residential-adult receptor would be 0.03 per million and for a residential-child receptor would be 0.64 per million. Thus, the cancer risks due to unmitigated construction activities are less than the BAAQMD threshold of 10 per million, and impacts would therefore be less than significant. Therefore, although MM AQ-2 is

not required for the Blossom Hill Road Project site, implementation of the mitigation measure would further reduce potential health impacts.

Both acute (short-term) and chronic (long-term) adverse health impacts unrelated to cancer are measured against a hazard index (HI), which is defined as the ratio of the predicted incremental exposure concentration from the project to a reference exposure level (REL) that could cause adverse health effects on a specific target organ (e.g., nervous system, respiratory system, cardiovascular system, etc.) within the human body. The REL are published by OEHHA based on epidemiological research. For this project, the DPM concentration is divided by the REL for DPM (i.e., 5 μg/m3) to determine the HI with potential effects on the respiratory system. The health impact is considered to be significant if the HI for DPM is greater than 1.0." Of note, there is a cancer potency factor and a chronic HI, but no acute HI, associated with DPM (OEHHA n.d.). The chronic REL for DPM was established by the California OEHHA as 5 $\mu g/m^3$ (OEHHA 2015). Thus, the annual concentration of DPM cannot exceed 5.0 $\mu g/m^3$, which would result in a chronic HI of greater than 1.0 (i.e., DPM annual concentration/5.0 $\mu g/m^3$). The unmitigated chronic HI would be 0.06 (for the Malone Road Project site) and less than 0.01 (for the Blossom Hill Road Project site). The mitigated chronic HI would be 0.01 (for the Malone Road Project site) and less than 0.01 (for the Blossom Hill Road Project site) and thus, the chronic HI would be below the project-level threshold of 1, and the impacts to public health from Project emissions would be less than significant with mitigation.[5]

Dispersion modeling also estimated the exposure of sensitive receptors to Project-related concentrations of $PM_{2.5}$. BAAQMD's *CEQA Air Quality Guidelines* requires inclusion of $PM_{2.5}$ exhaust and fugitive dust emissions in this analysis (BAAQMD 2022). Unmitigated annual $PM_{2.5}$ concentration due to construction (combustion exhaust and fugitive dust) would be 0.36 $\mu g/m^3$ for the Malone Road Project site (above the BAAQMD significance threshold of 0.3 $\mu g/m^3$) and 0.01 $\mu g/m^3$ for the Blossom Hill Road Project site With implementation of MM AQ-2, mitigated annual $PM_{2.5}$ concentration due to construction (combustion exhaust and fugitive dust) would be 0.13 $\mu g/m^3$ for the Malone Road Project site and less than 0.01 $\mu g/m^3$ for the Blossom Hill Road Project site and, thus, the annual $PM_{2.5}$ concentration would fall below the BAAQMD significance threshold of 0.3 $\mu g/m^3$. Therefore, impacts would be less than significant with mitigation incorporated.

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

Less than Significant Impact. Construction-related odors from the use of diesel-powered construction equipment may be evident in the immediate vicinity of the Project sites but would disperse rapidly and are unlikely to be perceptible at adjacent parcels. Although excavation of decaying organic material is not expected during construction, implementation of BMP AQ-2 (Reduce Construction Exhaust Emissions) would ensure that nearby residences are not adversely affected by any stockpiled materials. As similar to odors from the use of diesel-

[5] MM AQ-2 would be required to reduce the cancer risk but would also reduce the chronic HI.

powered construction equipment, diesel fumes generated during monthly testing of the standby generators are unlikely to be perceptible beyond the Project sites. The potential for Project construction to generate odors affecting a substantial number of people would be less than significant.

Best Management Practices

The following measures would be implemented per BAAQMD's *CEQA Air Quality Guidelines*, Table 5-2, and Valley Water BMPs):

BMP AQ-1:

- 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.
- 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 Measures

MM- AQ-1 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.

MM- AQ-2 The applicant shall implement the following measures during construction to further reduce construction exhaust emissions:

- All construction equipment larger than 50 horsepower used at the site for more than two continuous days or 20 hours total shall utilize diesel engines that are EPA certified "Tier 4 Final" emission standards for particulate matter and be equipped with California Air Resources Board (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.[6]
- 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 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.

3.4.4 Biological Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☑	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☑	☐	☐

[6] EPA 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 1990s and Tier 2 was required, followed by implementation of Tier 3 and Tier 4 by 2015 with a phase out of Tier 2.

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☑	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☑	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☑	☐	☐

Environmental Setting

The Project sites are located within the City of San José in Santa Clara County, on undeveloped land near the south end of the City. The Malone Road Project site is surrounded by residential properties. The Blossom Hill Road Project site is approximately 0.06 mile from Sánchez Ponds, 0.10 mile from the Los Alamitos Percolation Ponds, 0.50 mile from the Almaden Lake Park, and approximately 0.80 mile from the Santa Teresa Hills. The Project sites are categorized as OSPH under the City of San José 2040 General Plan and are bounded by residences and urban development (City of San José 2011) The Malone Road Project site is zoned Single-Family Residential (up to five dwelling units per acre) and Single-Family Residential (up to eight dwelling units per acre). The Blossom Hill Road Project site is zoned High Industrial and Planned Development (City of San José 2011).

Soil types ultimately play a large role in influencing distributions of habitats and wildlife. Soils at the Malone Road work area are categorized as Urban land — Still complex, 0 to 2 percent slopes, and Urban land — Elpaloalto complex, 0 to 2 percent slopes. Soils at the Blossom Hill work area are categorized as Urban land — Landelspark complex, 0 to 2 percent slopes (NRCS n.d.).

San José's latitude and location on the west coast of California create a Mediterranean climate. The wet season extends from November through March, and the dry season, when rain is limited, occurs May through October. The wet season is categorized as cool but mild whereas

the dry season is characterized by consistent warm sunny days. The average mid-summer high temperature ranges from 80 to 85 degrees Fahrenheit, with lows consistently between 55- and 60-degrees Fahrenheit. High temperatures during mid-winter months range between 55 and 60 degrees Fahrenheit, with nighttime temperatures ranging between 40 and 45 degrees Fahrenheit (Miller and Null 2015). The average yearly precipitation in San José is 14.9 inches (U.S. Climate Data, n.d.).

Baseline human disturbance at the Project sites is moderate, and the sites are characterized by urban development and residential uses.

The habitat land cover types and covered species as determined by the VHP to be located within the Project sites and/or within a 1-mile radius of the Project sites are described below. These land cover zones include Serpentine Fee Zones, Wetland Fee zones, Plant Survey Areas, and known occurrences of covered plants survey areas. Of these, mixed riparian forest and woodland, is considered sensitive by the CDFW.

1. **Serpentine bunchgrass grassland**: Occurs near the Malone Road Project site. Dominated by smooth lessingia (*Lessingia micradenia* var. *glabrata)*, fragrant fritillary (*Fritillaria liliacea*), Metcald canyon jewelflower (*Streptanthus albidus* ssp. *albidus*), most beautiful jewelflower (*Streptanthus glandulosus* ssp. *glandulous*), Tiburon paintbrush (*Castilleja affinis* subsp. *neglecta*), and Coyote ceanothus (*Ceanothus ferrisae).* Scattered Santa Clara Valley dudleya (*Dudleya abramsii* ssp. *setchelli*), which is listed as endangered under the federal ESA, occurs in rocky outcrops adjacent to but outside of the survey area (CDFW 2024).
2. **Mixed riparian forest and woodland:** Occurs near the Malone Road Project site. The canopy of this landcover type is typically dominated by Fremont cottonwood forest and woodland (*Populus fremontii – Fraxinus velutina – Salix gooddingii*) Alliance, California sycamore (*Platanus racemosa*), and Goodding's willow - red willow riparian woodland and forest (*Salix gooddingii – Salix laevigata*) Alliance. Shrubs include willows (*Salix* spp.) (Santa Clara County 2006; CDFW 2024).
3. **Willow riparian forest and scrub:** Occurs within the Malone Road Project and Blossom Hill Road Project sites. The dominant canopy species in this habitat include Black willow (*Salix gooddingii*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), and narrowleaf willow (*Salix exigua*). In addition, Fremont cottonwood, white alder (*Alnus rhombifolia*), bigleaf maple, California sycamore (*Platanus racemosa*), and coast live oak are often found in these communities (Santa Clara County 2006; CDFW 2024).
4. **Open water aquatic (pond):** Occurs near the Blossom Hill Road Project site. The Blossom Hill Road Project site is approximately 0.06 mile from Sanchez Ponds, 0.50 mile from the Almaden Lake Park, and 0.10 mile from the Los Alamitos Percolation Ponds (CDFW 2024).

5. **Urban suburban:** A developed land cover type represented by the adjacent residential area and horticultural landscaping (CDFW 2024).
6. **Ranchlands and natural lands:** Occurs nearby the Malone Road Project site and Blossom Hill Road Project site . Ranchlands and natural lands are typically dominated by natural land cover types including grassland, oak woodland, and chaparral (Willdan Financial Services 2012; CDFW 2024)**.**
7. **Agricultural and valley floor lands:** Occurs within the Malone Road Project site and Blossom Hill Road Project site. Agricultural and valley floor lands are typically dominated by cultivated agricultural land cover types such as grain, row crop, hay and irrigated pasture, disked/short term fallowed, orchards, and vineyard (Willdan Financial Services 2012; CDFW 2024)**.**
8. **Small vacant sites under 10 acres:** Occurs near the Malone Road Project site. This land type is typical of undeveloped sites (Willdan Financial Services 2012; CDFW 2024)**.**
9. **Bay checkerspot butterfly (wildlife survey area)**: Occurs within the Malone Road survey area but not within the Malone Road Project site; (BIOS_Admin 2023).
10. **Tricolored blackbird (wildlife survey area):** Occurs within the wildlife survey area, including the Blossom Hill Road Project site (CDFW 2021).

Discussion

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

Less than Significant Impact. Several special status species were determined to have possibly extirpated from the Project sites or vicinity and, thus, would not be adversely impacted by the Project. These species include the Northern California legless lizard, western ridged mussel, robust spineflower, California tiger salamander, and the Congdon's tarplant.

A 1-mile buffer around each Project site was applied to establish the survey area for determining the likelihood of presence of species identified as a candidate sensitive, or special status species by the CDFW, USFWS, or in any local or regional policies, plans, or regulations. Multiple species that meet these criteria are assumed to be present within 1 mile of the Project sites, as listed in Table 3.4-2.

Table 3.4-2 One-mile Radius of Species of Special Concern and State and/or Federally Listed as Candidate, Sensitive, or Special Status

Category	Species [a]
CDFW species of special concern	• Obscure bumble bee • Yellow rail • Hoary bat • Chaparral ragwort • American peregrine falcon (delisted) • Burrowing owl • Great blue heron • Snowy egret • Great egret • Black-crowned night heron
State and/or federally listed as threatened or endangered, candidate, sensitive, or special status	• Crotch's bumblebee • Western bumblebee • Steelhead • Santa Clara Valley dudleya • Western pond turtle

Source: (CDFW 2024)

As stated in the SMP, bank stabilization activities often necessitate the operation of heavy equipment within the stream bed (after dewatering). Movement of heavy equipment may compact the substrate, potentially killing benthic invertebrates, embedding gravel within finer sediments, and otherwise altering habitat conditions. California tiger salamander, Santa Clara Valley dudleya, burrowing owl, and western pond turtle are listed as threatened under the federal ESA as well as being covered species under the VHP. Of those four species, California tiger salamander was determined to be unlikely or highly unlikely to occur in or near the Project sites. The Project sites were previously developed as flood control areas and would not be expected to provide the high-quality habitat necessary for the Santa Clara Valley dudleya, burrowing owl, or western pond turtle to complete their life cycle.

Valley Water would implement BMP BI-3 (Remove Temporary Fill), BMP BI-5 (Avoid Impacts to Nesting Migratory Birds), BMP BI-6 (Avoid Impacts to Nesting Migratory Birds Pending Construction), BMP BI-8 (Choose Local Ecotypes of Native Plants and Appropriate Erosion-control Seed Mixes), BMP BI-10 (Avoid Animal Entry and Entrapment), and BMP BI-11 (Minimize Predator Attraction), through which any potential Project impacts on biological resources, including species identified as a candidate, sensitive, or special species would be avoided or minimized should they be encountered during construction. BMP BI-5 requires that nesting bird surveys be performed by a qualified biologist prior to any activity that could result in the abandonment, loss, damage, or destruction of active nests. BMP BI-8 requires consultation with a qualified biologist or vegetation specialist. BMP BI-10 requires secure animal entry to prevent entrapment of animals. BMP BI-11 requires removal of trash from

worksites to avoid predator attraction. Additionally, Valley Water would implement AMM BIO -1, which requires that all tools, equipment, and clothing and shoes be sanitized before entering sensitive natural areas. Prior to the commencement of any work, a sanitizing agent would be obtained from a Valley Water botanist. With implementation of these BMPs and AMMs as part of the Project design, impacts to species identified by the CDFW or USFWS a candidate, sensitive, or special status species in any local or regional plans, policies, or regulations would be less than significant.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Less than Significant Impact with Mitigation Incorporated. VHP land cover zones (including Serpentine Fee Zones, Wetland Fee zones, Plant Survey Areas, and Known occurrences of covered plants) that occur within or nearby the Malone Road Project site include serpentine bunchgrass grassland, open water aquatic, and mixed riparian forest and woodland, willow riparian forest and scrub, Bay checkerspot butterfly wildlife survey area, tricolored blackbird wildlife survey area, urban lands, ranchlands and natural lands, agricultural and valley floor lands, and vacant land. (CDFW 2024). Of these, mixed riparian forest and woodland, is considered sensitive by the CDFW, as mentioned above. Additionally, the Malone Road Project site has had known occurrences of Santa Clara Valley dudleya nearby but outside of the survey area, which is covered under the VHP. AMM-BIO1 (Phytophthoras in Native Habitats), which would be employed to avoid introduction of plant pathogens into these habitats/land cover types, would require all equipment, tools, vehicles, and personal protective equipment to be cleaned and disinfected prior to commencement of work. The potential loss of serpentine bunchgrass grassland, open water aquatic, and mixed riparian forest and woodland, willow riparian forest and scrub, Bay checkerspot butterfly wildlife survey area, tricolored blackbird wildlife survey area, urban lands, ranchlands and natural lands, agricultural and valley floor lands, and vacant lands as well as Santa Clara Valley dunleya could occur as a result of the Project's proposed excavation of the existing earth embankment for repair work (CDFW 2024). Given the natural rarity and loss of native/natural serpentine habitats across the county in recent decades, even a small amount of loss of these habitats from the Project activities would be considered significant.

The work areas are within the VHP, and Section 2.3.4 (In-Stream Operations and Maintenance) of the VHP identifies maintenance activities as a covered activity. The VHP was adopted to address cumulative impacts on biological resources of foreseeable development until 2063 through implementation of conservation measures to adequately offset the impacts of covered activities. Projects covered under the VHP can compensate for permanent or temporary impacts to covered species and their habitats through payment of land cover fees to help fund the VHP's Conservation Program, which ensures the conservation of certain species and habitats in the region. Mitigation Measure BIO-4 (Payment of VHP Fees) requires Valley Water to pay applicable VHP land cover fees as compensation to mitigate for Project impacts on covered

species and their habitats, including serpentine bunchgrass grassland, open water aquatic, mixed riparian forest and woodland, and covered species Santa Clara Valley dudleya.

Accordingly, implementation of Mitigation Measure BIO-4 (Payment of VHP Fees) would reduce impacts to VHP covered land cover zones and species. These fees would be used to implement the conservation strategy resulting in the protection, restoration, and enhancement of land cover zones and species, which promotes recovery for listed species and prevention of listing for non-listed species. Therefore, impacts on riparian habitat or other any other sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFW or USFWS would be less than significant with mitigation incorporated.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. The Blossom Hill Project site is located in the vicinity of several bodies of water; however, none of these water bodies are considered a state or federally protected wetland. Potential impacts to the ponds, which are covered under the VHP, are discussed above, in Impact b. Thus, the Project would not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marshes, vernal pools, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means. No impact would occur.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact. Valley Water would implement BMP BI-5 (Avoid Impacts to Nesting Migratory Birds), BMP BI-6 (Avoid Impacts to Nesting Migratory Birds Pending Construction), BMP BI-10 (Avoid Animal Entry and Entrapment), and BMP BI-11 (Minimize Predator Attraction) to avoid and minimize any potential Project impacts on biological resources should any of the species be encountered during construction. BMP BI-5 requires that nesting bird surveys be performed by a qualified biologist prior to any activity that could result in the abandonment, loss, damage, or destruction of active nests. BMP BI-10 requires secure animal entry to prevent entrapment of animals. BMP BI-11 requires removal of trash from worksites to avoid predator attraction. The proposed Project would consist of erosion repair activities at the Malone Road and Blossom Hill Road Project sites, including the installation of an active dewatering system, debris removal and tree removal, and replacing the failed gabion basket structure through rock slope protection, with two grade control features along the channel bed. Proposed construction activities are anticipated to occur between June 15, 2026, and October 15, 2026, for 4 months. Project activities may temporarily displace some wildlife around the Project site. However, interference would be minor and temporary and would not substantially interfere with the movement of or impede the use of nursery sites for native wildlife. Therefore, impacts would be less than significant.

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

Less than Significant Impact with Mitigation Incorporated. The proposed Project would be consistent with City of San José General Plan policies governing landscaping and tree protection (City of San José 2011). The Project would not impact heritage trees (City of San José 2014). The Malone Road Project site would require the removal of up to 15 trees (black walnut, Oregon ash, almond, Fremont cottonwood, weeping willow, California buckeye, and black locust) that range between 4 to 32 inches dbh for construction of the access ramp and the concrete embankment.

Projects covered under the VHP can compensate for permanent or temporary impacts to covered species and their habitats through payment of land cover fees that help fund the VHP's Conservation Program, which ensures the conservation of certain species and habitats in the region. Mitigation Measure BIO-4 (Payment of VHP Fees) requires Valley Water to pay applicable VHP land cover fees as compensation to mitigate for Project impacts on covered species and their habitats

Implementation of MM BIO-4 (Payment of VHP Fees), which requires payment of impact fees in accordance with the VHP, would mitigate impacts on land cover zones and covered species identified as representing important ecosystems in the VHP area . These fees would be used to implement the conservation strategy resulting in the protection, restoration, and enhancement of land cover zones and covered species, which promotes recovery for listed species and prevention of listing for non-listed species. Therefore, impacts related to conflicts with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, would be less than significant with mitigation incorporated.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less than Significant with Mitigation Incorporated. The proposed Project sites are located within the boundaries of the Santa Clara Valley Habitat Conservation Plan (HCP)/Natural Community Conservation Planning. The Project is a covered activity under the VHP (Santa Clara Valley Habitat Agency, n.d.). Accordingly, Valley Water would comply with all applicable VHP conditions during Project implementation as described in Section 2, Project Description. Additionally, implementation of MM BIO-4 (Payment of VHP Fees), which requires payment of impact fees in accordance with the VHP, would mitigate impacts on natural communities identified as representing important ecosystems in the VHP area. The Project would not conflict with any provisions of an adopted HCP/NCCP or other approved local, regional, or state HCP. Therefore, impacts would be mitigated to less than significant with mitigation incorporated.

Mitigation Measures

MM BIO-4 Payment of VHP Fees

Valley Water would pay applicable VHP land cover fees as compensation to mitigate for Project impacts on covered species and their habitats.

3.4.5 Cultural Resources

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☐	☐	☑
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☑	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☑	☐

Environmental Setting

The two proposed Project sites are located on undeveloped land along Guadalupe River: one site at Malone Road and a separate site at Blossom Hill Road, both within the City of San José. As discussed in Section 3.4.7, soils at the Malone Road Project site are categorized as Urban land – Still complex, 0 to 2 percent slopes, and Urban land – Elpaloalto complex, 0 to 2 percent slopes (NRCS n.d.). Soils at the Blossom Hill work area are categorized as Urban land – Landelspark complex, 0 to 2 percent slopes. None of the soils are classified as expansive, and County geohazards mapping shows both Project site fall outside defined zones of compressible soil hazard (County of Santa Clara 2021).

According to the CEQA Guidelines section 15064.5, historical resources include properties listed in or eligible for listing in the California Register of Historical Resources as well as those listed in or eligible for listing in the National Register of Historic Places. Additionally, properties designated under a local preservation ordinance or identified in a local historical resources inventory are presumed significant unless substantial evidence suggests otherwise. Furthermore, any resource that has not been previously identified but is evaluated and determined to meet the California Register criteria is also considered a historical resource.

Panorama Environmental conducted a Cultural Resource Investigation, which identified no historic properties within either of the Project sites. Three historic properties were identified within approximately 0.5 mile of the Malone Road Project site. One historic property is a McDonalds Drive-in Restaurant with original tile and golden arches, located at 2434 Almaden Expressway. The second historic property is a Spanish Colonial Revival property located at 660 Willow Glen Way. The third historic property is the Dr. Ernesto Galarza House, located at 1031 Franquette Avenue. There are no historic properties within 0.5 mile of the Blossom Hill

Road Project site (City of San José 2020b). Four heritage trees (cedar and a Fremont poplar) are located within 0.5 mile of the Malone Road Project site and one heritage tree (evergreen maple) is located within 0.5 mile of the Blossom Hill Road Project site (City of San José 2020a).

Discussion

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

No Impact. The City of San José maintains a database of historic properties linked to the City's GIS system, which provides a listing and mapping of historic resources that have been documented and evaluated. A search using San José's publicly available Historic Resources Inventory data layer showed no historic properties, as identified by the City of San José, within either of the Project sites (City of San José 2020b). As stated above, three historic properties were identified within 0.5 mile of the Malone Road Project site; however, there would be no impacts to these properties due to the limited scope of Project activities and the distance of the Project site from these properties. Therefore, the Project would not cause a substantial adverse change in the significance of a historical resource, and no impact would occur.

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

Less than Significant Impact. Erosion repair activities at the Project sites would include the installation of an active dewatering system, debris removal and tree removal, replacement of the failed gabion basket structure through rock slope protection, with two grade control features along the channel bed, and excavation work. The Project sites were previously disturbed by the flood protection work involved in the creation of the existing facilities, including previous ground disturbance. Accordingly, the potential for the discovery of unanticipated prehistoric resources at either the surface level or below ground is low.

Valley Water would implement BMP CU-1 (Accidental Discovery of Archaeological Artifacts or Burial Remains) and AMM-CR-1 (Pre-construction Worker Awareness Training) to avoid or minimize any potential Project impacts on archeological resources if unknown resources are encountered during construction. BMP CU-1 (Accidental Discovery of Archaeological Artifacts or Burial Remains) would require Valley Water to immediately stop any work should any historical or either unique archaeological artifacts or tribal cultural resources be discovered during construction until proper protocols are met. These protocols would include establishing a "no work" zone of 100 feet around the find and consulting with a qualified archeologist to determine if the artifact is significant. If the artifact is determined to be significant, the archeologist would determine whether the artifact can be avoided and, if so, would detail the avoidance procedures. If the artifacts cannot be avoided, the archeologist would develop an action plan that would minimize impacts and, if required, include a data recovery plan for recovery of artifacts.

AMM CR-1 (Pre-construction Worker Awareness Training) would minimize potentially significant impacts from the accidental discovery of undocumented archaeological resources by

training construction personnel to identify the types of artifacts that could be encountered along with the proper procedures should tribal cultural resources be encountered.

With implementation of BMP CU-1 (Accidental Discovery of Archaeological Artifacts or Burial Remains) and AMM-CR-1 (Pre-construction Worker Awareness Training), impacts on archaeological resources would be less than significant.

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

Less than Significant Impact. Due to the Project sites having been extensively previously disturbed during installation of the existing flood protection infrastructure, there is a very low likelihood of encountering human remains during construction. While unlikely, discovery of human remains during construction activities is possible.

Valley Water would implement standard precautionary measures for the accidental discovery of unknown finds consistent with BMP CU-1 (Accidental Discovery of Archeological Artifacts, Tribal Cultural Resources, or Burial Remains). In the event human remains or burial sites are discovered, Valley Water would stop any work and immediately notify the County Coroner. No further excavation or disturbance of the Project site would be allowed within 100 feet of the remains unless otherwise authorized by the County Coroner, California NAHC, and/or the County Coordinator of Indian Affairs. Incorporation of BMP CU-1 (Accidental Discovery of Archaeological Artifacts or Burial Remains) would minimize potentially significant impacts from the accidental discovery of undocumented burial remains.

To further avoid impacts from the disturbance of previously undiscovered human remains, Valley Water would implement AMM CR-1 (Pre-construction Worker Awareness Training). All earthmoving construction personnel would receive cultural sensitivity awareness training that includes information on the possibility of encountering tribal cultural resources during construction, the types of artifacts likely to be seen based on previous finds in the Project site, and the proper procedures in the event tribal cultural resources are encountered. Worker training would be prepared and presented by a qualified archaeologist with appropriate experience and expertise in teaching non-specialists. The awareness training would be conducted on site at the start of construction and thereafter as required for new construction personnel.

With implementation of BMP CU-1 (Accidental Discovery of Archaeological Artifacts or Burial Remains) and AMM CR-1 (Pre-construction Worker Awareness Training), impacts associated with the disturbance of human remains would be less than significant.

Mitigation Measures

No mitigation measures would be required.

3.4.6 Energy

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	☑	☐
b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	☐	☐	☐	☑

Environmental Setting

There were more than 35 million registered vehicles in California in 2023 (DMV n.d.) and 23.6 billion gallons of gasoline and 3.6 billion gallons of diesel (including offroad diesel) sold in 2022, the latest years for which there are data (CEC n.d.-b; CEC n.d.-a). Gasoline accounts for most of California's transportation energy sources, and most equipment on site would be powered by petroleum and diesel. These fuels are commercially provided and would be available to the proposed Project via commercial outlets and wholesalers.

Discussion

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

Less than Significant Impact. During construction, the proposed Project would require the use of construction vehicles to deliver personnel and materials to the Project site, for work site preparation and excavation, to remove existing debris and bank materials, to remove existing failed gabions baskets, and to install new rock rip-rap. Construction would be temporary, lasting 4 months. Once construction is complete, no new regular consumption of energy resources would be required. Although no mitigation measures are necessary to reduce this impact to a less-than-significant level, implementation of BMP AQ-2 (Avoid Stockpiling Odorous Materials) would reduce the Project's impacts by requiring minimization of idling times and requiring all equipment be maintained and tuned properly. As a result, the Project would not result in wasteful, inefficient, or unnecessary consumption of energy, and impacts would be less than significant.

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

No Impact. The proposed Project includes bank stabilization activities at two locations within the City of San José and does not include any energy-consuming features. Therefore, the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency and no impact would occur.

Mitigation Measures

No mitigation measures would be required.

3.4.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist–Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and, potentially, result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☑	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☑	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☑	☐	☐

Environmental Setting

The Project sites are located on the floor of the Santa Clara Valley, a major structural depression bounded to the east by the Hayward fault, Calaveras fault, and allied structures and to the west by a complex fault system east of the San Andreas trend. This includes the Sargent and Berrocal faults and is sometimes referred to as the *foothills fault system* or the *range-front faults* (Stanley et al. 2002; Langenheim, Schmidt, and Jachens 1997).

Regional geologic mapping published by the U.S. Geological Survey (USGS) shows the Malone Road Project site as situated on natural levee deposits of Holocene age. These range from sandy and clayey silt to sandy and silty clay and represent sediment deposited by spreading floodwaters adjacent to active streams (Wentworth et al. 1999). The Blossom Hill Road Project site is mapped as situated on bedrock identified as mélange of the Upper Cretaceous – Lower Tertiary Franciscan complex Central belt. This comprises a matrix of sheared argillite and metasandstone containing blocks of blueschist, amphibolite, chert, and/or mafic igneous rocks (Wentworth et al. 1999).

Geohazards mapping issued by the County of Santa Clara pursuant to the state's Alquist-Priolo Earthquake Fault Zoning Act and Seismic Hazards Mapping Act shows both work areas well outside the County's identified earthquake fault zones and landslide hazard areas. However, both Project sites are located within County-defined zones of liquefaction hazard (County of Santa Clara 2021). Moreover, like the rest of the Bay Area, the Project site vicinity and greater Santa Clara County are subject to some degree of risk from strong seismic ground shaking. Recent USGS studies suggest that there is an aggregate 72-percent probability of one or more earthquake events with a magnitude of 6.7 or greater occurring in the Bay Area over the next two decades. The probability of at least one magnitude 6.7 or greater earthquake occurring on the major faults closest to the Project site vicinity is as follows (USGS 2016):

- Hayward fault: 33 percent
- Calaveras fault system: 26 percent
- San Andreas fault: 22 percent

Soils at the Malone Road Project site are classified as Urban land— Still complex, 0 to 2 percent slopes, and Urban land — Elpaloalto complex, 0 to 2 percent slopes. Soils at the Blossom Hill Project site are categorized as Urban land — Landelspark complex, 0 to 2 percent slopes (NRCS n.d.). None of the soils are classified as expansive, and County geohazards mapping shows both Project sites as outside defined zones of compressible soil hazard (County of Santa Clara 2021). Table 3.4-3 summarizes the characteristics of soil units mapped at the two work areas.

Table 3.4-3 Soils in Work Areas

Soil unit	Characteristics
Urban land-Landelspark complex, 0 to 2 percent slopes	Consists of 70% Urban land, 20% Landelspark and similar soils, and 10% minor components Urban land Disturbed and human-transported material on alluvial fan surfaces Landelspark Well-drained soils of alluvial fans, formed in alluvium derived from sedimentary and/or metavolcanic rock; nonsaline to very slightly saline; calcium carbonate content 2% maximum; not identified as expansive 0 – 1 inch: slightly decomposed plant material 1 – 4 inches: sandy loam 4 – 10 inches: sandy clay loam 10 – 19 inches: sandy clay loam 19 – 23 inches: very gravelly sand 23 – 35 inches: silty clay loam 35 – 55 inches: clay loam 55 – 79 inches: sandy clay loam
Urban land-Still complex, 0 to 2 percent slopes	Consists of 70% Urban land, 25% Still and similar soils, and 5% minor components Urban land Disturbed and human-transported material on floodplains and alluvial fan surfaces Still Well-drained soils of floodplains and alluvial fans, formed in alluvium derived from metamorphic and sedimentary rocks and/or alluvium derived from metavolcanic rock; nonsaline to very slightly saline; not identified as expansive 0 – 2 inches: sandy loam 2 – 12 inches: very fine sandy loam 12 – 20 inches: silt loam 20 – 33 inches: silt loam 33 – 37 inches: loam 37 – 51 inches: loam 51 – 62 inches: loam 62 – 72 inches: loam

Soil unit	Characteristics
Urban land-Elpaloalto complex, 0 to 2 percent slopes	Consists of 70% Urban land, 23% Elpaloalto and similar soils, and 7% minor components Urban land Disturbed and human-transported material on alluvial fan surfaces Elpaloalto Well-drained soils of alluvial fans, formed in alluvium derived from metamorphic and sedimentary rock and/or alluvium derived from metavolcanic rock; nonsaline to slightly saline; not identified as expansive 0 – 8 inches: slightly decomposed plant material 8 – 17 inches: clay loam 17 – 26 inches: silty clay loam 26 – 35 inches: silty clay loam 35 – 47 inches: silty clay loam 47 – 71 inches: silty clay loam 71 – 94 inches: silty clay loam

Source: (NRCS n.d.)

Discussion

a) Directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist–Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

No Impact. Both Project sites are located well outside identified earthquake fault zones and are therefore not considered to be at risk of surface fault rupture. Therefore, no impact related to surface fault rupture is anticipated.

ii. Strong seismic ground shaking?

Less than Significant Impact. As discussed above, the improvements constructed by the proposed Project are likely to be exposed to strong seismic ground shaking during their anticipated 20-year lifespan. However, the Project would replace existing areas of degraded and structurally compromised bank stabilization with new facilities constructed in accordance with the recommendations of site-specific geotechnical investigations. Accordingly, the Project is expected to increase the seismic resistance of bank stabilization along the Guadalupe River. Moreover, because the Project focuses exclusively on bank stabilization to protect areas of existing development, it would have no potential to directly or indirectly increase populations in the site vicinities (see Section 3.4.14) and no potential to lead to other new construction in the vicinity of the Project sites. As a result, the Project would have no potential to expose additional people or other new (non-Project) structures to seismic ground shaking hazards. Rather, the Project would be expected to increase the seismic resistance of bank stabilization along the Guadalupe River. Although seismic ground shaking has the potential to affect the proposed Project sites, the proposed Project activities would not increase the potential for substantial adverse effects, including the risk of loss, injury, or death from seismic ground shaking. Impacts would be less than significant, and overall, the Project would be beneficial relative to strong seismic ground shaking.

iii. Seismic-related ground failure, including liquefaction?

Less than Significant Impact. As noted above, both Project sites are located in County-defined zones of identified liquefaction hazard. Thus, given the likelihood of the South Bay region experiencing at least one large earthquake over the next two decades, it is reasonably foreseeable that Project improvements could be subject to risks associated with substrate liquefaction. There may also be some existing potential for lateral spreading, which refers to slope or ground failure caused by liquefaction. However, as discussed in a(ii) above, the Project would replace existing degraded and compromised bank stabilization with repaired facilities constructed in accordance with the recommendations of site-specific geotechnical investigations. The repaired Project facilities would thus be expected to more effectively withstand the effects of liquefaction than the existing facilities, increasing the seismic resistance of bank stabilization along the Guadalupe River to both liquefaction and lateral

spreading hazard. Additionally, as noted above, the Project would have no potential to increase populations or lead to new construction in the site vicinities and, thus, would not result in exposure of additional people or new (non-Project) structures to seismic ground shaking hazards. Rather, as noted above, the Project would be expected to increase the seismic resistance of bank stabilization along the Guadalupe River. Although liquefaction, and possibly also lateral spreading, has the potential affect the proposed Project sites, the proposed Project activities would not directly or indirectly increase the risk of substantial adverse effects related to these hazards, including the risk of loss, injury, or death from related to liquefaction or lateral spreading. Impacts would be less than significant, and overall, the Project would be beneficial relative to strong seismic ground shaking.

iv. Landslides

No Impact. The Project sites are located on nearly flat topography at some distance from the range fronts bounding the Santa Clara Valley. The sites are also outside the landslide hazard zones identified by the County of Santa Clara (County of Santa Clara 2021). Accordingly, proposed Project facilities are not considered to be at risk from landslides in general or from seismically induced landslides. Additionally, as discussed above, the Project would have no potential to increase populations or add new structures in the vicinity of the Project sites. In view of these factors, no impact related to landslides is anticipated.

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

Soil Erosion: Less than Significant Impact. The proposed Project would require ground disturbance for demolition/removal of the existing bank protection and installation of the replacement features and, thus, would have some potential to result in accelerated soil erosion. Materials laydown and equipment movement could also result in ground disturbance which could potentially accelerate soil erosion. However, the total area of disturbance would be limited (the Guadalupe River crossing upstream of the Malone Road Project site is approximately 0.25 acre; and the Guadalupe River crossing at Blossom Hill Road Project site is approximately 0.1 acre). Moreover, the Project would incorporate BMPs per Valley Water's Best Management Practices Handbook (standard for all Valley Water projects) as well as project-specific AMMs, consistent with standard requirements of Valley Water's SMP. These would include the following:

- AMM GEN-4. Minimize the Area of Disturbance
- BMP WQ-17. Prevent Stormwater Pollution/AMM GEN-20. Erosion and Sediment Control Measures

AMM GEN-4 would help to ensure that unnecessary ground disturbance is avoided, and BMP WQ-17/AMM GEN-20 would require precautions to reduce the potential for erosion and control sediment mobility where disturbance is necessary for construction. In view of the limited area of disturbance and these protective measures, impacts related to the potential for Project activities to result in soil erosion are expected to be less than significant.

Loss of Topsoil: Less than Significant Impact. The majority of the disturbance required for Project construction would occur in areas that have already been significantly altered for previous

channelization and bank protection of the Guadalupe River as well as for roadway construction and, thus, are not expected to preserve an intact topsoil profile. As a result, no impact related to loss of topsoil is anticipated.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Potential issues related to liquefaction and slope stability (landslide hazards) are discussed in previous items above. Lateral spreading is also discussed above since it is a liquefaction-related phenomenon. The following discussion focuses on compressible soils and the potential for excavation cuts to become unstable. It also addresses the potential for the Project to induce on- or off-site subsidence and collapse.

Compressible Soils: No Impact. Compressible soils are clay and/or organic material–rich soils that are prone to compaction or subsidence when a load is applied. Compressible soils can be problematic since they may necessitate remedial measures or specialized designs. As noted above, neither of the Project sites are within the hazard zone for compressible soils defined by the County of Santa Clara (County of Santa Clara 2021). Therefore, no impact with regard to compressible soils is anticipated.

Unstable Excavation Cuts: Less than Significant Impact. Minor excavation would likely be necessary for removal of the existing bank protection infrastructure and installation of the Project improvements. Any excavation carries some risk of instability, and removal of trees from the banks could also result in localized instability. These risks would be effectively minimized by adherence to the recommendations of site-specific geotechnical investigations conducted for the Project and the design criteria laid out in Attachment A of Valley Water's SMP, which reflect prevailing best practices. With these strictures in place, the potential for the Project to create unstable conditions related to excavation would be less than significant.

Subsidence: No Impact. The term *subsidence* refers to a sinking or decrease in elevation of the ground surface, most commonly in response to excessive groundwater withdrawals. While subsidence has been widely recognized as a concern in Santa Clara County for decades, it has largely been arrested within the county as a result of improved groundwater management practices and reliance on an increased proportion of surface water supply (Valley Water n.d.-c; Valley Water 2019). The Project would not increase the use of groundwater and would not alter groundwater management practices in any way. Therefore, the Project would not impact on- or offsite subsidence.

Collapse: No Impact. In the geotechnical context, *collapse* usually refers to a sudden decrease in volume resulting from wetting or loading of metastable soils with an open texture (collapsible soils), which can result in structural damage. No potential for collapsible soils has been identified at the Project sites, and the Project improvements would be constructed in accordance with the recommendations of site-specific geotechnical investigations that take site-specific soil

constraints into account. No impact associated with collapse is anticipated on or off the Project sites.

d) Be located on expansive soil, creating substantial direct or indirect risks to life or property?

Less than Significant Impact. Table 3.4-3, above provides an overview of soils mapped by the Natural Resources Conservation Service (NRCS) at each of the Project sites. None of these soils are explicitly identified as expansive by NRCS's online Web Soil Survey tool, but where clay-rich soils are involved, some may in fact be expansive, particularly since available mapping is regional rather than site-specific in scale. However, the proposed Project would be limited to replacement and improvement of existing bank protection infrastructure and, thus, would not increase the extent of infrastructure exposed to expansive soil hazards; rather, it would increase the integrity of bank protection in the Project areas. Additionally, as discussed in other items above, the Project would adhere to recommendations of site-specific geotechnical investigations conducted for the Project. Finally, the proposed Project would have no potential to increase area populations or result in additional new construction off-site and, thus, would not increase overall regional exposure to hazards related to expansive soils. Impacts related to the potential for presence of expansive soils are evaluated as less than significant.

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

No Impact. The proposed Project would focus exclusively on replacement of failing bank stabilization components along two reaches of the Guadalupe River and would not involve septic tanks or other alternative wastewater systems. Therefore, no impact would occur.

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

Unique paleontological resources: Less than Significant Impact with Mitigation Incorporated. Paleontological (fossil) resources include preserved remains of past plants and animals as well as animal burrows, traces, tracks, and trackways. They are protected under federal and state regulations, including CEQA, because of their potential to provide scientifically important information and are generally considered important because of both their value as heritage resources and their informational potential. With that in mind, the Society of Vertebrate Paleontology (SVP) defines *significant paleontological resources* as including "fossils and fossiliferous deposits… consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information." The SVP limits the definition of *paleontological resources* to materials more than about 5,000 years old (SVP 2010).

This analysis generally follows the SVP's methods, which were specifically developed to assist lead agencies in complying with CEQA protections for paleontological resources. The term *unique paleontological resource or site*, which is not defined in the CEQA Guidelines, can be construed to refer to *significant paleontological resources* as defined by the SVP. Because fossil materials may be buried in sediment or rock units below the ground surface, their presence or

absence cannot be determined with certainty in advance of the proposed Project activities. Evaluating the potential for impacts on paleontological resources therefore becomes a risk analysis that addresses two questions:

- What is the likelihood that scientifically important (significant) paleontological resources are present in the Project area?
- If present, would such resources be disturbed, damaged, or destroyed as a result of Project activities?

The likelihood that significant fossil resources are present is evaluated based on the documented track record of the geologic units in the Project area with regard to fossil finds. Units that have produced important fossil finds in the past are considered likely to contain additional materials and are accordingly considered sensitive for paleontological resources. The potential for loss of paleontological resources is directly related to the paleontological sensitivity of the affected geologic units and the extent of project-related ground disturbance, particularly disturbance involving previously undisturbed substrate materials. In this context, mitigation approaches for paleontological resources impacts—for example, SVP's standard protocol (SVP 2010)—also focus on risk reduction and on reducing loss of information in the event fossil resources are discovered activities.

As discussed above, the Malone Road Project site is situated on natural levee deposits of Holocene age (less than about 11,000 years old). The Blossom Hill Road Project site is mapped as situated on bedrock assigned to the Upper Cretaceous – Lower Tertiary Franciscan (Wentworth et al. 1999).

In general, Holocene age materials are not considered highly sensitive for paleontological resources, in large part because the upper portion of the Holocene record is too young to contain materials that qualify as fossils per the SVP's definition. The University of California Museum of Paleontology online collections database does, however, contain several records for fossil localities in the Holocene of Santa Clara County. These include invertebrate finds from Mayfield and Charlston Sloughs in the Palo Alto area and a site in Sunnyvale as well as pollen from Triangle Marsh on Coyote Slough. Unspecified finds have also been made at sites along the Guadalupe River and Alum Creek (UCMP n.d.).

Additionally, the 2005 discovery of Columbian mammoth (*Mammuthus columbi*) remains in Holocene-mapped strata along Valley Water's Guadalupe River right-of-way near Mineta International Airport (UCMP 2005) indicates that Holocene-mapped materials in the Santa Clara Valley area may have previously unrecognized potential to contain significant fossil materials; added caution is therefore warranted for projects involving Holocene-mapped materials. In addition, surface-exposed Holocene strata are presumed based on well-documented regional geologic relationships to be underlain at depth by older units of Pleistocene age. Pleistocene strata throughout California are treated as paleontologically sensitive because they have historically produced a wealth of significant fossil finds.

The paleontological sensitivity of the Franciscan complex mélange mapped at the Blossom Hill Road Project is uncertain. The unit's high-grade metamorphic rock components are unlikely to contain significant fossil materials, but there is potential for fossil remains in chert blocks and possibly also in the sheared argillite and metasandstones of the mélange matrix. If any such materials are present, their significance remains undetermined.

At both Project sites, excavation and other ground disturbance could result in loss of scientifically important paleontological resources, with the potential for significant impacts. To address the potential for significant impacts to paleontological resources concern, Valley Water would implement MM GEO-1 and MM GEO-2. These MMs require the implementation of measures to ensure that, should any fossil finds be made, they would be recovered and curated in a manner consistent with discipline-standard procedures, thereby avoiding or minimizing the loss of heritage resources and associated scientific information (SVP 1996; SVP 2010). With implementation of these measures, impacts related to the potential for destruction of a unique paleontological resource or site would be reduced to a less than significant level.

Unique geologic features: No Impact. The Project sites are located in a densely developed urbanized setting, and no unique geologic features are recognized at or in close proximity to either site. There would be no impact on unique geologic features.

Mitigation Measures

MM GEO-1 Worker Awareness Training for Paleontological Resources

Prior to groundbreaking, Valley Water shall retain qualified staff to develop and present in-person worker awareness training for paleontological resources. As used here, *qualified staff* refers to an individual who satisfies one or both of the following criteria:

- A qualified professional paleontologist, as defined by the Society of Vertebrate Paleontology (SVP 2010), who is experienced in delivering training to non-specialists
- A California-licensed professional geologist (PG) who has expertise in South San Francisco Bay Area stratigraphy and paleontology and is experienced in delivering training to nonspecialists

Training shall be concise and substantive. It shall include information on the possibility of encountering fossils during construction; the types of fossils that may be seen and how to recognize them; and proper procedures in the event fossils are encountered. All field management and supervisory personnel and construction workers involved with ground-disturbing activities shall be required to take this training prior to beginning work on the project. Upon completion of the training, workers shall be required to sign a form stating that they attended the training and that they understand and will comply with the information presented. Training shall be presented bilingually in English and Spanish as well as other languages, as needed, when indicated as appropriate by the contractor.

MM GEO-2 Stop Work, Evaluation, and Treatment in the Event of a Paleontological Find

Should vertebrate remains or other potentially significant fossil resources, as defined by SVP, be discovered during Project activities, all work in the immediate vicinity of the discovery shall cease, the find shall be protected in place, and the contractor shall be required to notify their pre-designated Valley Water contact before the end of the work day. Valley Water shall detail qualified staff—i.e., staff meeting the criteria for a qualified professional paleontologist as defined by SVP (SVP 2010)—to evaluate the find and recommend appropriate follow-up treatment consistent with current prevailing discipline practice and current SVP guidelines (SVP 2010) . Work may continue in other parts of the Project sites while evaluation (and, if needed, treatment) takes place so long as, in the judgment of the qualified staff, the find can be adequately protected. Valley Water would be responsible for ensuring that the recommendations of the qualified staff regarding treatment and reporting are implemented.

3.4.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

Environmental Setting

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)). Substantial evidence can be in the forms of technical studies, agency staff reports or opinions, expert opinions supported by facts, and prior CEQA assessments and planning documents. BAAQMD does not have an adopted threshold of significance for construction GHG emissions. 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 carbon dioxide (CO_2e) per

year for construction and 10,000 direct metric tons of CO_2e per year from operations (SMAQMD 2018).
- A threshold of 1,100 metric tons of CO_2e per year for construction activities is used by several air districts in the State (e.g., SMAQMD, PCAPCD, SCAQMD) for determining the significance of project-level GHG emissions.

The proposed Project's GHG emissions were compared to the 1,100 metric tons of CO_2e per year threshold for construction activities (i.e., offroad equipment and haul trucks). The proposed Project is not a typical land residential or commercial land use project as it is considered a temporary construction project. Thus, the land use project design elements significance threshold does not apply.

BAAQMD's *CEQA Air Quality Guidelines* states that "because construction emissions are temporary and variable, the Air District has not developed a quantitative threshold of significance for construction-related GHG emissions. However, the Lead Agency should quantify and disclose GHG emissions that would occur during construction." Furthermore, BAAQMD does recommend that a lead agency make a determination on the significance of these construction generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals, as required by Public Resources Code section 21082.2. BAAQMD also recommends that projects incorporate BMPs in order to minimize GHG emissions for projects using construction equipment (based on BAAQMD's CEQA Air Quality Guidelines, Table 6-1). Consistent with BAAQMD guidance, Valley Water has incorporated BMP GHG-1 to reduce construction related GHG emissions as components of the Project.

In conclusion, this analysis uses the 1,100 metric tons of CO_2e per year significance threshold to assess potential GHG construction emissions impacts from the Project. Project emissions of less than 1,100 metric tons of CO_2e per year would indicate that the Project's contribution to global climate change would be less than cumulatively considerable.

Discussion

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

Less than Significant Impact. Construction of the proposed Project would generate GHG emissions from the combustion of fossil fuels associated with construction equipment, material hauling, and worker trips. Construction-related emissions were estimated using CalEEMod (California Emissions Estimator Model Version 2022.1) (CAPCOA n.d.). As shown in Table 3.4-4, the estimated total construction GHG emissions is 597 metric tons of CO_2e. As indicated, 30-year amortized annual construction-related GHG emissions would be approximately 20 metric tons of CO_2e, which is below the significance threshold of 1,100 metric tons of CO_2e per year (RCH Group 2024a). Construction emissions were amortized over 30 years, consistent with SCAQMD's Interim CEQA GHG Significance Threshold for Stationary Sources (SCAQMD 2008). Therefore, the Project's impacts related to direct or indirect GHG emissions would be less than significant.

Table 3.4-4 Estimated Construction Greenhouse Gas Emissions (metric tons)

Category	Greenhouse gas emissions (metric tons of CO_2e)
Malone Road	289
Blossom Hill Road	308
Project total	**597**
30-Year amortized	**19.9**
Significance threshold	1,100
Significant? (Yes or No)	No

Source Air Quality Technical Report Valley Water Guadalupe River Bank Stabilization Project: (RCH Group 2024a)

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

Less than Significant Impact. In 2021, Santa Clara Valley Water published its *Climate Change Action Plan* (CCAP) (Valley Water 2021). The CCAP is a District-wide plan to reduce GHG emissions that are 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 2022). 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 (CARB 2022).

Valley Water's 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 (Valley Water 2021). Project construction consistency with the CCAP is demonstrated, based on the following items:

- 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 haul routes that are optimized to minimize GHG emissions.

The 2022 Scoping Plan is implemented at the state level, and compliance at a specific plan or project level is not addressed therein. The Project would use vehicles and equipment that would meet current standards at the time of construction and operation 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, therefore impacts from GHG emissions would be less than significant.

The proposed Project would be consistent with the applicable strategies in the 2022 Scoping Plan, adopted for the purposes of reducing GHG emissions by addressing incremental contributions to climate change. Thus, the Project's incremental contribution to climate change from GHG emissions would not be cumulatively considerable.

Further, the Project would ensure that GHG emissions are minimized through implementation of BMPs. With implementation of BMP GHG-1 (Construction GHG Emissions), 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. With implementation of BMP GHG-1, Project construction activities would be consistent with SB 32, AB 1279, the 2022 Scoping Plan, the Valley Water CCAP, and Climate Smart San José and would not conflict with these GHG-reduction policies and plans. Therefore, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, and impacts would be less than significant.

Best Management Practices

Consistent with BAAQMD guidance, Valley Water has incorporated the following best management practices to reduce construction related GHG emissions into the Project design:

BMP GHG-1 GHG Reduction

- Require all diesel-fueled off-road construction equipment be equipped with USEPA Tier 4 Final compliant engines or better as a condition of contract. Where specific equipment is required and an USEPA-rated Tier 4 version is not available, other lower tiered equipment may be used, so long as it can be demonstrated that acquiring the Tier 4 equipment would not be feasible (defined as not being available in the market or resulting in schedule delays that could be detrimental to completion of the project). Alternatively, use CARB – approved renewable diesel fuel in off-road construction equipment and on road trucks.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than two minutes (A five-minute limit is required by the state airborne toxics control measure [Title 13, Sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the project site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure.
- Require all construction equipment to be maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a

certified mechanic 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 activity workers and offer meal options onsite or shuttles to nearby meal destinations for construction activity workers.
- Recycle or salvage nonhazardous construction and demolition debris, with a goal of recycling at least 15 percent more by weight than the diversion requirement in Title 24.
- Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water.
- Include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and construction activities.

Mitigation Measures

No mitigation measures would be required.

3.4.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☑	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☑
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the Project site?	☐	☐	☐	☑
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☑	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☑	☐

Environmental Setting

According to the provisions in Government Code section 65962.5, commonly referred to as the Cortese List, the Cal/EPA makes available resources for information on the location of hazardous materials release sites. A Project site's location within or near a Cortese List site has implications for compliance with CEQA. The following resources were reviewed to identify any Cortese List sites relevant to the Project:

- List of Hazardous Waste and Substances sites from the Department of Toxic Substances Control (DTSC) EnviroStor database
- List of Leaking Underground Storage Tank (LUST) Sites from the State Water Resources Control Board (SWRCB) GeoTracker database
- List of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit
- List of "active" Cease and Desist Orders and Cleanup and Abatement Orders from SWRCB
- List of hazardous waste facilities subject to corrective action identified by DTSC

According to reports retrieved from the EnviroStor database, there are four hazardous waste sites within 0.5 mile of the Malone Road Project site. These sites include a certified school cleanup site (1610 Bird Avenue), two inactive tiered permit inactive sites (1982 Angela Street and 335 Turtle Creek Court), and one inactive school investigation site (2222 Unified Way) (DTSC n.d.). According to the GeoTracker database, there are eight closed LUST cleanup sites and no groundwater contaminant plumes within 0.5 mile of the Malone Road Project site (SWRCB n.d.-a). There are no "active" Cease and Desist Orders and Cleanup and Abatement Orders from SWRCB within 1 mile of the Malone Road Project site (SWRCB n.d.-b). There are no solid waste disposal sites in the vicinity of the Malone Road Project site with waste constituents exceeding hazardous waste levels, as identified by the SWRCB (EPA n.d.).

According to the EnviroStor database, no active hazardous waste sites are located within 0.5 mile of the Blossom Hill Road Project site (DTSC n.d.). According to the GeoTracker database, there are 11 closed case LUST Cleanup Sites, one closed cased Cleanup Program Site, one open but inactive Cleanup Program Site, and two open cleanup program sites (5775 Winfield Boulevard and 5305 Almaden Expressway). No groundwater contaminant plumes are located within 0.5 mile of the Blossom Hill Road Project site (SWRCB n.d.-a). There is one gasoline service station located at 1099 Blossom Hill Road, approximately 0.25 mile west of the Blossom Hill Project site, that has an "active" Cease and Desist Order and Cleanup and Abatement Orders from SWRCB (SWRCB n.d.-b). There are no solid waste disposal sites in the vicinity of the Blossom Hill Road Project site with waste constituents above hazardous waste levels as identified by the SWRCB (EPA n.d.).

Sensitive Receptors

Sensitive receptors located in the vicinity of the Project sites include residential properties. The nearest residences to the Malone Road Project site surround the site along Malone Road and Almaden Road at a distance of approximately 50 feet. The nearest residences to the Blossom Hill Road Project site are approximately 450 feet northeast of the Project site along Blossom River Drive.

Discussion

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

Less than Significant Impact. The proposed Project sites are on vacant, undeveloped land that are adjacent to residential and urban development. Because the Project site is vacant and undeveloped under existing conditions, no substantial hazards or hazardous materials are expected to be present; regardless, Valley Water consulted the SWRCB's Geotracker database. No groundwater contaminant plumes were identified within 0.5 mile of the Project sites.

The proposed Project site would not require long-term use, storage, treatment, disposal, or transport of hazardous materials. During construction, diesel fuel and oil may be used. Additionally, the handling of hazardous materials such as fuels, lubricating fluids, and solvents for use with construction equipment on site may occur. Accidental spills or improper use, storage, transport, or disposal of these hazardous materials could result in a public hazard or the transport of hazardous materials to underlying soils and groundwater. Although these hazardous materials could pose a hazard, as described above, the Project would be required to comply with extensive state and federal regulations so that substantial risks would not occur. All storage, handling, and disposal of these materials would be done in accordance with regulations established by DTSC, EPA, Occupational Safety and Health Administration (OSHA), California Governor's Office of Emergency Services (Cal OES), Certified United Program Agencies (CUPA), and Cal/OSHA.

The Project would include implementation of the following Valley Water BMPs to reduce the risk and hazards posed by their usage: HM-7 (Restrict Vehicle and Equipment Cleaning to

Appropriate Locations), HM-8 (Ensure Proper Vehicle and Equipment Fueling and Maintenance), HM-9 (Ensure Proper Hazardous Materials Management), and HM-10 (Utilize Spill Prevention Measures), and HM-13 (Avoid Impacts from Naturally Occurring Asbestos). Implementation of these BMPs and compliance with applicable regulations would avoid and minimize a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Therefore, impacts would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant Impact. Project construction vehicles may require emergency maintenance that could result in the release of oil, diesel, transmission fluid, or other materials. However, these materials would not be used in quantities or be stored in a manner that would pose a significant hazard to the public or environment. Although there are several sites with documented hazardous substance releases within 0.5 mile of the Project sites, none of these releases would be an environmental concern for the Project. Valley Water BMPs, including HM-8, HM-9, and HM-10, listed above, would be incorporated for the Project. These measures dictate the storage requirements and handling procedures for hazardous materials as well as fueling and spill cleanup procedures. Implementation of these BMPs would avoid and minimize a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, impacts would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. The Project sites are not located within one-quarter mile of an existing or proposed school. The closest school to the Malone Road Project site is approximately 0.36 mile northwest. The closest schools to the Blossom Hill Road Project site are approximately 0.70 mile west and approximately 0.70 mile southeast. Therefore, the Project would not create hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 1-quarter mile of an existing or proposed school. No impact would occur.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. Neither of the Project sites is located within a site included on a list of hazardous materials sites provided by Cal/EPA per Government Code section 65962.5. Therefore, the Project would not create a significant hazard to the public or the environment as a result of being located on a hazardous materials site, and no impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the Project site?

No Impact. There are two public airports in the City of San José: Reid Hillview Airport and the San José International Airport. The nearest airport is the San José International Airport, located approximately 4.5 miles northwest of the Malone Road Project site and approximately 7.4 miles northwest of the Blossom Hill Road Project site (Windus 2007; City of San José Planning Division 2013). Reid Hillview Airport is approximately 4 miles northeast of the Malone Road Project site and 6 miles northeast of the Blossom Hill Road Project site. Neither of the Project sites are located within an airport land use plan area and, therefore, the Project would not result in a safety hazard or excessive noise for people residing or working near the Project sites. No impact would occur.

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

Less than Significant Impact. The proposed Project would consist of bank stabilization activities, with most Project activities occurring on Valley Water fee title or easement property and off public roadways. As discussed in Section 3.4.9, due to the limited number of vehicles required for the Project and the temporary nature of construction activities, the Project would not impair or physically interfere with an adopted emergency response or evacuation plan. Therefore, impacts would be less than significant.

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

Less than Significant Impact. The Project sites are located in open space areas surrounded by residential uses and urban development. The proposed Project would not expose people or structures to a significant risk of loss, injury, or death due to wildland fires. As a standard safety practice, Valley Water would have fire prevention equipment on site, including fire extinguishers and shovels. BMP HM-12 (Incorporate Fire Prevention Measures) would be incorporated to reduce fire risk associated with proposed Project construction. Additionally, a water truck would be present during all dust-generating activities and could also be used for fire suppression activities, if necessary. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

3.4.10 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☑	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☑
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. result in substantial erosion or siltation on- or off-site;	☐	☐	☑	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☑
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☑	☐
iv. impede or redirect flood flows?	☐	☐	☑	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☑	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☑	☐

Environmental Setting

The Project sites are in the Guadalupe River Watershed, which spans 170 square miles and encompasses the Guadalupe River (Valley Water, n.d.-a). The headwaters of the 170-square-mile Guadalupe River Watershed originate in the Santa Cruz Mountains, with major tributaries including Los Gatos Creek, Guadalupe Creek, and Alamitos Creek (of which Calero Creek is a tributary). Valley Water owns the following reservoirs in this watershed: Lexington Reservoir and Vasona Lake on Los Gatos Creek, Guadalupe Reservoir on Guadalupe Creek, Almaden Reservoir on Alamitos Creek, and Calero Reservoir on Calero Creek. Valley Water operates the Almaden-Calero Canal, which enables the transfer of water from Almaden Reservoir to Calero

Reservoir. The San José Water Company owns and operates the Lake Elsman reservoir, located on Los Gatos Creek above Lexington Reservoir (Valley Water, n.d.-b).

Proposed Project work would occur along the Guadalupe River. The Blossom Hill Road Project site is approximately 0.06 mile from Sánchez Ponds, 0.10 mile from the Los Alamitos Percolation Ponds, and 0.50 mile from the Almaden Lake Park. There are no waterbodies apart from the Guadalupe River near the Malone Road Project site.

According to Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) Viewer, the Malone Road Project site is located in FIRM 06085C0242H, and the Blossom Hill Road Project site is located between two Flood Insurance Rate Maps (FIRMs): 06085C0263H and 06085C0401H. According to the California Department of Water Resources, both Project sites contain 100-year floodplains, with no base flood elevation determined (FEMA 2020). A 100-year floodplain is an area determined by FEMA to have a 1 percent probability of flooding in any given year.

Discussion

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

Less than Significant Impact. The proposed Project would fall under the jurisdiction of the San Francisco Regional Water Quality Control Board (SFRWQCB). The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), adopted in accordance with the statewide water quality policy, designates water quality standards for most inland surface waters, including surface drainages such as creeks, swales, streams, and rivers.

Project activities would include the creation of an access ramp, installing a sump pump to divert any nuisance flows, creation of an active dewatering system, removing damaged concrete slope paving and failed gabion baskets, grading and excavation, and installation of riprap. Construction activities have the potential to cause erosion of surface soils and sedimentation of water bodies, including the Guadalupe River. Additionally, fluids such as fuel or oils from equipment could impair water quality of nearby water bodies if an accidental release were to occur. Project activities would occur during the dry season; however, isolated rain events may occur. If a dry season rain event is forecasted, Valley Water would temporarily stop work to ensure any stormwater could pass through the system and would reinitiate work once the sites have adequately dried.

To minimize potential impacts to water quality standards and waste discharge requirements, and to reduce the risk and hazards from construction equipment and activities to water bodies and nearby waterways, Valley Water would implement the following BMPs: HM-8 (Ensure Proper Vehicle and Equipment Fueling and Maintenance), HM-9 (Ensure Proper Hazardous Materials Management), HM-10 (Utilize Spill Prevention Measures), WQ-3 (Limit Impact of Pump and Generator Operation and Maintenance), WQ-5 (Stabilize Construction Entrances and

Exits), WQ-11 (Maintain Clean Conditions at Work Sites), WQ-15 (Prevent Water Pollution), WQ-16 (Prevent Stormwater Pollution), and WQ-17 (Manage Sanitary and Septic Waste).

Additionally, the Project would be required to adhere to the California Regional Water Quality Control Board (RWQCB) San Francisco Bay Region Municipal Regional Stormwater NPDES Permit Number R2-2015-0049. Prior to beginning work, crews would install and implement construction site controls to prevent discharges of pollutants from the construction sites.

In addition, implementation of BMPs WQ-4 (Limit Impacts from Staging and Stockpiling Materials), WQ-5 (Stabilize Construction Entrances and Exits), WQ-9 (Use Seeding for Erosion Control, Weed Suppression, and Site Improvement), WQ-11 (Maintain Clean Conditions at Work Sites), and WQ-16 (Prevent Stormwater Pollution) would reduce or prevent erosion caused by construction activities. Standard waste collection and good housekeeping practices would also be observed.

Following Project implementation, all work areas would be restored to match pre-construction conditions. All construction material and debris would be removed and disposed of at approved facilities. Hydroseeding of all disturbed areas would be applied after construction and before seasonal rain events, with reapplication when necessary for winterization.

With incorporation of the BMPs discussed above, restoration of work areas, and adherence to the RWQCB San Francisco Bay Region Municipal Regional Stormwater NPDES Permit Number R2-2022-0049, the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Therefore, impacts would be less than significant.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

No Impact. The proposed Project consists of repairs to address the damaged concrete-lined channel and failed gabion baskets as well as the removal of overgrown vegetation that is exacerbating erosion. The proposed Project would involve the creation of an active dewatering system, which would divert and return water to the river just downstream of the Blossom Hill Road Project site. Any groundwater encountered during drilling and excavation activities would be pumped into a Baker Tank, or similar equipment, located along the top of bank for containment prior to disposal. The Project would not draw from a groundwater aquifer and would not deplete groundwater supplies or interfere with groundwater recharge, and there would be no impact.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. result in a substantial erosion or siltation on- or off-site?

Less than Significant Impact. The proposed Project would include erosion repair activities at the Malone Road Project site and the Blossom Hill Road Project site, including the installation of an active dewatering system, debris removal and tree removals, and replacing the failed gabion basket structures through rock slope protection, with two grade control features along the channel bed.

Flows at the Malone Road Project site are mainly controlled by upstream dam summer operations and have experienced continuous flows during the summer months in recent history, as discussed in Chapter 2: Project Description. Flows would be diverted by a sump pump fitted with pipes, hoses, and an erosion dissipater and turbidity filter downstream of the proposed Project sites. For the entirety of the Project duration, the sump pump would divert any nuisance flows around the Project site as needed. The Blossom Hill Road Project site may experience running flows during summer months. The diversion system at this Project site would consist of an earthen berm along with a portable dam structure installed within 50 feet upstream and 50 feet downstream of the Project site. This would effectively accomplish an active bypass along the center cell of Blossom Hill Road bridge. The active bypass setup would divert and return water to the river just downstream of the Blossom Hill Road Project site.

Project activities may increase erosion, as detailed above; therefore, the following BMPs would be implemented to reduce or prevent erosion caused by proposed Project construction: WQ-4 (Limit Impacts from Staging and Stockpiling Materials), WQ-5 (Stabilize Construction Entrances and Exits), WQ-9 (Use Seeding for Erosion Control, Weed Suppression, and Site Improvement), WQ-11 (Maintain Clean Conditions at Work Sites), and WQ-16 (Prevent Stormwater Pollution). Additionally, standard waste collection and good housekeeping practices would be observed. If a dry season rain event is forecasted, Valley Water would temporarily stop work to ensure any stormwater can pass through the system and would reinitiate work once the sites have adequately dried.

Following Project implementation, all work areas would be restored to match pre-construction conditions. All construction material and debris would be removed and disposed of at approved facilities. Hydroseeding of all disturbed areas would be applied after construction and before seasonal rain events, with reapplication when necessary for winterization.

Given the incorporation of the BMPs discussed above and planned restoration of work areas, along with the temporary nature of the Project, the proposed Project is not expected to substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in a substantial erosion or siltation on or off site. Therefore, impacts would be less than significant.

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

No Impact. The proposed Project's erosion repair activities involve bank stabilization at two sites where in-stream structures along the Guadalupe River have experienced erosion and subsequent damage to the embankment and potential neighboring properties. The Project would not alter the drainage pattern of the river; it would, however, stabilize and reinforce the river's concrete embankment that provides needed flood protection for properties located along the Guadalupe River. Therefore, implementation of the Project would not increase the rate or amount of surface water runoff, and no impact would occur.

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant Impact. As discussed above, the Project would require the use of equipment that uses fuels and lubricants. For this reason, Valley Water BMPs would be incorporated to reduce the risk and hazards to water bodies from construction equipment and activities in and near waterways. These BMPs include HM-8 (Ensure Proper Vehicle and Equipment Fueling and Maintenance), HM-9 (Ensure Proper Hazardous Materials Management), HM-10 (Utilize Spill Prevention Measures), WQ-3 (Limit Impact of Pump and Generator Operation and Maintenance), WQ-5 (Stabilize Construction Entrances and Exits), WQ-11 (Maintain Clean Conditions at Work Sites), WQ-15 (Prevent Water Pollution), and WQ-16 (Prevent Stormwater Pollution).

Additionally, to minimize and reduce erosion potential associated with construction-related activities that would disturb soils, such as excavation, vegetation removal, and grading, Valley Water would implement the following BMPs: BMPs WQ-4 (Limit Impacts from Staging and Stockpiling Materials), WQ-5 (Stabilize Construction Entrances and Exits), WQ-9 (Use Seeding for Erosion Control, Weed Suppression, and Site Improvement), WQ-11 (Maintain Clean Conditions at Work Sites), and WQ-16 (Prevent Stormwater Pollution).

The Project would also be required to adhere to the RWQCB San Francisco Bay Region Municipal Regional Stormwater NPDES Permit Number R2-2022-0049. Prior to beginning work, crews would install and implement construction site controls to prevent discharges of pollutants from the construction sites. Further, Project work would be avoided during dry season rain events and reinitiated once the Project sites have dried. Therefore, implementation of the Project would not create or contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, and impacts would be less than significant.

iv. impede or redirect flood flows?

Less than Significant Impact. As discussed above in Impact c(i), the proposed Project would not impede or redirect flood flows as Project activities would address the existing damaged concrete-lined channel and failed gabion baskets as well as remove vegetation and trees. The

Malone Road Project site is expected to have minimal flows during summer, however any flows would be diverted using a sump pump with pipes, hoses, an erosion dissipater, and a turbidity filter. This setup would operate throughout the Project duration. The Blossom Hill Road Project site may experience running flows during summer months. The Blossom Hill Road diversion system would include an earthen berm along with a portable dam structure installed 50 feet upstream and 50 feet downstream of the Project site, creating an active bypass along the center cell of Blossom Hill Road bridge. The active bypass would divert and return water to the river just downstream of the Blossom Hill Road Project site. Once repair activities are completed, the Project sites would continue to function as they were originally designed, providing erosion control, flood protection, and infrastructure protection. Therefore, the Project would not impede or redirect flood flows, and impacts would be less than significant.

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

Less than Significant Impact. As discussed in the SMP, portions of the Guadalupe River (extending approximately 0.5 mile inland from the river mouths) could be impacted by tsunamis; however, as described in Section 3.4.7, Hydrology and Geomorphology, of the Valley Water SMP EIR, bank stabilization activities would not exacerbate tsunami conditions in areas that would be susceptible to tsunamis. In addition, no large bodies of water are present at either Project site that could create seiche hazards. Further, bank stabilization activities would reduce the potential for impacts of mudflow. As stated above, the proposed Project would be constructed outside the boundary of the 100-year floodplain at both Project sites, as indicated by the FEMA FIRMs. A 100-year floodplain is a geographic area having a 1 percent chance of being flooded in any given year (FEMA 2020). Project activities would be temporary and occur during the dry season (June 15 and October 15), when chances of rainfall and flooding are relatively low.

Project activities would repair the damaged concrete slope paving and failed gabion baskets as well as remove overgrown vegetation and trees, all conditions that, if left un-remediated, could exacerbate impacts from a significant flooding event. Once completed, bank stabilization and repair activities would reduce the potential for flow impacts from flood or tsunami hazards. Therefore, impacts associated with the release of pollutants in flood hazard, tsunami, or seiche zones from implementation of the proposed Project would be less than significant.

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

Less than Significant Impact. The proposed Project is located within the Santa Clara Valley groundwater basin, which is subject to Valley Water's 2021 Groundwater Management Plan, designed to sustainably maintain and manage groundwater (Valley Water 2021). Implementation of an erosion control plan and Valley Water's BMPs, both of which have been developed to be consistent with the Basin Plan, have been incorporated into the Project. The Project would reduce flooding and erosion and would therefore not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

3.4.11 Land Use and Planning

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☑
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

Environmental Setting

The Project sites are categorized as OSPH under the City of San José 2040 General Plan and are bounded by residences and urban development (City of San José 2011). The area surrounding the Malone Road Project site is zoned Single-family Residential (up to five dwelling units per acre) and Single-family Residential (up to eight dwelling units per acre). The area surrounding the Blossom Hill Road Project site is zoned High Industrial and Planned Development (City of San José 2011).

Discussion

a) Physically divide an established community.

No Impact. The proposed Project consists of bank repair and stabilization activities along an existing river bank area. Project activities would also include minimal vegetation and tree removal along with restoration of the work areas once construction is complete. Therefore, construction of the Project would not physically divide an established community, and no impact would occur.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. As discussed above, the proposed Project is located in an area categorized as OSPH by the City of San José 2040 General Plan. The Project would not introduce new land uses or result in land use changes. As a result, the Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact, and no impact would occur.

Mitigation Measures

No mitigation measures would be required.

3.4.12 Mineral Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☑

Environmental Setting

The Malone Road Project site does not contain soils types known to hold key mineral resources. The Malone Road Project site is located in an area classified as flood plains and alluvial plain landform, with a typical soil profile comprised of the following types (Survey Staff, NRCS n.d.-a):

Map Unit 130:

- A1: 0 to 2 inches: sandy loam
- A2: 2 to 12 inches: very fine sandy loam
- Bw1: 12 to 20 inches: silt loam
- Bw2: 20 to 33 inches: silt loam
- 2Ab1: 33 to 37 inches: loam
- 2Ab2: 37 to 51 inches: loam
- 2Bwb1: 51 to 62 inches: loam
- 2Bwb2: 62 to 72 inches: loam

Map Unit 131:

- Oi: 0 to 8 inches: slightly decomposed plant material
- A: 8 to 17 inches: clay loam
- Bw1: 17 to 26 inches: silty clay loam
- Bw2 - 26 to 35 inches: silty clay loam
- Bw3: 35 to 47 inches: silty clay loam
- Bw4: 47 to 71 inches: silty clay loam
- C: 71 to 94 inches: silty clay loam

The Blossom Hill Road Project site does not contain soil types known to hold key mineral resources. The Blossom Hill Road Project site is located on an alluvial fan landform with a typical soil profile comprised of the following types (Survey Staff, NRCS n.d.-b):

Map Unit 170:

- Oi: 0 to 1 inch: slightly decomposed plant material
- A1: 1 to 4 inches: sandy loam
- A2: 4 to 10 inches: sandy clay loam
- A3: 10 to 19 inches: sandy clay loam
- C: 19 to 23 inches: very gravelly sand
- Ab1: 23 to 35 inches: silty clay loam
- Ab2: 35 to 55 inches: clay loam
- AB: 55 to 79 inches: sandy clay loam

Discussion

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. The Project sites are within areas that are not known to have mineral resources associated with their respective soil types. Mineral resources that are of local or state importance would not be impacted by activities at either the Malone Road or Blossom Hill Road Project sites as the soils at both sites mainly contain loam, silt, and clay combinations. Therefore, the Project would not cause a loss of a known mineral resource, and no impact would occur.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The Project sites are not within a mineral resource area, and the Project would not therefore result in loss of a locally important mineral resource recovery site. Implementation of the Project would not conflict with applicable Resource Conservation Elements of the Santa Clara County General Plan. Therefore, no impact would occur.

Mitigation Measures

No mitigation measures would be required.

3.4.13 Noise

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	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?	☐	☑	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑	☐

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☑

Environmental Setting

Noise-sensitive receptors as defined in the Envision San José 2040 General Plan include residences, hotels, motels, hospitals, and residential care facilities (City of San José 2011). The nearest noise-sensitive receptors to the Malone Road Project site are residences surrounding the site to the west (as close as approximately 50 feet away). The nearest noise-sensitive receptors to the Blossom Hill Road Project site are residences (approximately 450 feet northeast of the site).

To quantify existing ambient noise levels, the Valley Water Guadalupe River Bank Stabilization Noise Technical Report included seven short-term (10-minute) noise measurements in and around the Project sites. Noise levels ranged from 49 to 66 dB L_{eq} (5-minute L_{eq}) at the noise-sensitive receptor areas proximate to the Malone Road Project site and 55 to 63 dB L_{eq} (5-minute L_{eq}) at noise-sensitive receptor and commercial areas nearby the Blossom Hill Road Project site. The major source of ambient noise at both sites was existing traffic noise (RCH Group 2024b).

Because heavy equipment noise is unavoidable, particularly for infrastructure projects such as the proposed Project, jurisdictions typically provide noise ordinance and regulatory exemptions for specific, short-term, and temporary construction activities. The proposed Project sites are located within the City of San José; the General Plan provides the following standards for noise:

- Chapter 20.100.450 (Hours of construction within 500 feet of a residential unit): A) Unless otherwise expressly allowed in a development permit or other planning approval, no applicant or agent of an applicant shall suffer or allow any construction activity on a site located within 500 feet of a residential unit before 7:00 a.m. or after 7:00 p.m., Monday through Friday, or at any time on weekends.
- Sections 10.16.010 and 10.16.020 prohibit disturbing the peace and define disturbing noises (e.g., vehicle exhaust systems and revving engines), respectively.
- Without limiting the scope of section 20.100.310, no applicant or agent of an applicant shall suffer or allow any construction activity on a site subject to a development permit or other planning approval located within 500 feet of a residential unit at any time when that activity is not allowed under the development permit or planning approval. This section is applicable whenever a development permit or other planning approval is required for construction activity.

Discussion

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

Less than Significant Impact with Mitigation Incorporated. Construction activities are anticipated to occur between June 15, 2025, and October 15, 2025, for 4 months. Construction is expected to occur between 7 a.m. and 7 p.m., Monday through Friday, and typically would include 8-hour workdays (consistent with section 20.100.450 of the San José Municipal Code).

Construction activities would require the use of numerous pieces of noise-generating equipment, such as excavating machinery (e.g., excavators, loaders) and other construction equipment (e.g., tractors, backhoes, compactors, dump trucks). The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment, and the prevailing wind direction.

As discussed above, the nearest noise-sensitive receptors to Project construction activities would be the residences adjacent to the Malone Road Project site (as close as approximately 50 feet). The nearest noise-sensitive receptors to Project construction activities would be the residences approximately 450 feet northeast of the Blossom Hill Road Project site. Construction noise levels would range from 77 to 84 dB, L_{max} at 50 feet and 48 to 55 dB L_{max} at 450 feet (RCH Group 2024b).

Construction would result in a temporary increase in ambient noise levels in the vicinity of both Project sites. As discussed above, noise generally attenuates at a rate of 6 to 7.5 dB per doubling of distance. Based on the terrain at the Malone Road Project site (a "soft site"), an attenuation of 7.5 dB was used in the noise attenuation calculations. However, there would be a significant amount of noise attenuation occurring at the Malone Road Project site because work occurring on the river bank would be well below street level, meaning the line of site between construction equipment and the nearest residences would be obscured. Therefore, the noise analysis conservatively assumed the depth of work occurring at the Malone Road Project site would provide an additional 12 dB noise reduction at the nearest residence. After accounting for shielding from the depth of the river bank, the noise levels from construction at the Malone Road Project site at the nearest residence were predicted to be 46 to 72 dB L_{max} when construction equipment is used in the in-stream structure. (RCH Group 2024b).

For the Blossom Hill Road Project site, work would also occur below street level although not at the same depth as the river bank at the Malone Road Project site. The noise analysis conservatively assumed the depth of work occurring at the Blossom Hill Road Project site would provide an additional 5 dB noise reduction at the nearest apartment complex building. After accounting for shielding from the terrain, the noise levels from construction activities at the nearest residences were predicted to be 29 to 55 dB, L_{max}, when construction equipment is used in the in-stream structure. These noise levels would be masked by existing traffic noise

from Blossom Hill Drive and Blossom Hill Road and would likely not be noticeable to residents since existing traffic noise levels from Blossom Hill Drive and Blossom Hill Road ranged from 55 to 78 dB L_{max} nearby the residences (RCH Group 2024b).

As discussed above, construction is required to comply with the San José Noise Ordinance and would only occur between 7 a.m. and 7 p.m., Monday through Friday. However, a minimum of two generators would be used at each site where active dewatering would be required. These generators could potentially be used for 24 hours per day, which would generate noise outside the allowable hours of construction noise per the San José Noise Ordinance. Note that no other construction equipment would be used for active dewatering activities outside of the permitted construction hours of 7 a.m. to 7 p.m.

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 noise-sensitive receptors proximate to the Malone Road Project site. This analysis uses a significance threshold of 55 dB, L_{max}, the maximum noise level in allowed decibels at the property line according to the San Jose Municipal Code, Part 7, Chapter 20.30.700, at the nearest residential property line during nighttime hours (7 p.m. to 7 a.m.) to determine if nighttime use of the generators would be a potentially significant impact. Noise levels from the generators exceeding 55 dB, L_{max}, at the nearest property line could potentially cause sleep disruption. For the Blossom Hill Road Project site, the noise produced by the generators is predicted to be 37 dB, L_{max}, at 450 feet[7] (RCH Group 2024b). This would be well below the 55 dB, L_{max}, significance threshold and this would not result in any significant impacts from nighttime noise. For the Malone Road Project site, the noise produced by the generators is predicted to be 61 dB, L_{max}, at 50 feet (RCH Group 2024b). It should be noted that these are estimates based on current equipment specifications. This noise level would exceed the 55 dB, L_{max}, significance threshold. Thus, the use of the generators during nighttime hours would result in a significant impact at the Malone Road Project site. Implementation of Mitigation Measure NOI-1 would attenuate noise from the generators by approximately 20 dB, to 41 dB, L_{max}, through the use of four-sided noise barriers or sound blankets around the generators; Thus, noise levels would fall below the 55 dB, L_{max}, threshold (RCH Group 2024b). Therefore, impacts from an increase in ambient noise levels would be less than significant with mitigation incorporated. Once bank stabilization work is completed, there would be no change to conditions at either Project site that would result in an increase in ambient noise levels in the vicinity of either Project site. Therefore, impacts from a substantial temporary or permanent increase in ambient noise levels in the Project site vicinity

[7] This analysis assumes the two generators would be operating simultaneously side by side. Thus, the noise level from two generators operating simultaneously would result in a 3 dB increase from the noise of a single generator.

in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, would be less than significant with mitigation incorporated.

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

Less than Significant Impact. Construction activities have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and operations involved. In most cases, groundborne vibration generated by typical construction equipment does not result in adverse effects on people or structures. 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 vibration, a *peak particle velocity* (PPV) threshold of 0.5 inch per second (in./sec) or greater can cause architectural damage and minor structural damage. The Federal Transit Administration (FTA) therefore recommends a significance threshold of 0.5 in./sec PPV for evaluating potential impacts to residential and commercial structures from groundborne vibration (FTA 2006)

Depending on the construction activity location, several pieces of heavy equipment could be operated as close as 50 feet from the nearest residence at the Malone Road Project site. Other work at both Project sites would occur at distances much greater than 50 feet from off-site structures. Groundborne vibration from proposed heavy equipment operation was estimated to be between approximately 0.01 and 0.06 in./sec PPV, which falls below the FTA's significance threshold of 0.5 in./sec at 50 feet (RCH Group 2024b). The Project would not generate excessive groundborne vibration or groundborne noise levels, and the impact would thus be less than significant.

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

No Impact. The proposed Project is not within the vicinity of a public airport or private airstrip or within an airport land use plan. The nearest airport is the San José International Airport, located approximately 4.5 miles northwest of the Malone Road Project site and approximately 7.4 miles northwest of the Blossom Hill Road Project site. At this distance, the proposed Project would not expose people residing or working in the Project area to excessive noise levels. Therefore, no impact would occur.

Mitigation Measures

MM- NOI-1 Generator Noise Attenuation

If generators are used during nighttime hours (7 p.m. to 7 a.m.) at the Malone Road Project site, Valley Water shall install four-sided noise barriers/sound blankets around the generators.

3.4.14 Population and Housing

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☑
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Environmental Setting

The proposed Project is on Valley Water fee title or easement property. Adjacent residential neighborhoods and urban development surround both Project sites.

Discussion

a) Would the Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The Project would consist of erosion repair at the Malone Road Project site and the Blossom Hill Road Project site. Work at neither Project site would require the extension of roads or other infrastructure. As a result, the Project would not induce direct or indirect population growth within the area. Because the Project would not involve new infrastructure such as extension of roads or new homes, businesses, or other buildings, the Project would not induce any population growth. Therefore, no impact would occur.

b) Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The Project would consist of erosion damage repair, with work contained within the Malone Road Project site and Blossom Hill Road Project site. Workers on the Project would be local to the region and commute to the Project sites daily, and housing accommodations would not be required. Therefore, the Project would not displace any people and would not necessitate the construction of replacement housing, and no impact would occur.

Mitigation Measures

No mitigation measures would be required.

3.4.15 Public Services

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☑
Police protection?	☐	☐	☐	☑
Schools?	☐	☐	☐	☑
Parks?	☐	☐	☐	☑
Other public facilities?	☐	☐	☐	☑

Environmental Setting

The proposed Project sites are within the City of San José.

Fire Protection

The San Jose Fire Department (SJFD) serves 1.2 million residents over 200 square miles and responds to roughly 109,000 service calls annually (City of San José, n.d.-a). SJFD currently operates 34 fire stations in the city (City of San José, n.d.-c). The closest fire station to the Malone Road Project site is Fire Station 37, located approximately 0.65 mile southwest of the Project site at 2191 Lincoln Avenue in San José. The closest fire station to the Blossom Hill Road Project site is Fire Station 17, located approximately 0.85 mile southwest of the Project site at 5170 Coniston Way in San José.

Police Protection

The San José Police Department (SJPD) employs approximately 1,700 employees and consists of four bureaus comprised of 11 divisions (San José Police Department, n.d.). The SJPD has over 70 specialized units and assignments throughout San José (San José Police Department, n.d.). SJPD headquarters is located at 201 West Mission Street.

Schools

San José has 22 school districts with a total of 682 schools (GreatSchools.org, n.d.-a). The Malone Road Project site and Blossom Hill Road Project site are located within the San José Unified School District (GreatSchools.org, n.d.-b; n.d.-b). The closest school to the Malone Road Project

site is Galarza Elementary School, approximately 0.36-mile northwest of the Project site. The closest schools to the Blossom Hill Road Project site are Almaden Elementary School, approximately 0.70 mile west of the Project site and Allen at Steinbeck Elementary School, approximately 0.70 mile southeast of the Project site.

Parks

The City of San José Parks, Recreation, and Neighborhood Services Department consists of nine regional parks, 207 neighborhood parks, and 290 park playgrounds (City of San José, n.d.-b). Parks within 1 mile of the Malone Road Project site include Robert Antonio Balermino Park, River Glen Park, and Roy Avenue Park. Parks within 1 mile of the Blossom Hill Road Project site include Chris Hotts Park, Leif Erikson Park, and Almaden Lake Park.

Other Public Facilities

The library closest to the Malone Road Project site is the Willow Glen Branch Library, approximately 1.10 miles northwest of the Project site. The closest library to the Blossom Hill Road Project site is Pearl Avenue Branch Library, approximately 1.14 miles north of the Project site.

Discussion

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire Protection, Police Protection, Schools, Parks, Other Public Facilities?

No Impact. Construction and operation of the proposed Project would not result in the need for expanded police protection services or fire protection services. Construction of the Project would be short term and temporary, lasting 4 months. Therefore, the Project would not require new or additional police and fire protection. No impact would occur.

As discussed in Section 3.4.14, the proposed Project would not include population-inducing components. Therefore, the Project would not result in an increased demand for school services, parks, or other public facilities, and no public facilities would need to expand in order to accommodate the Project. Therefore, no impact would occur.

Mitigation Measures

No mitigation measures would be required.

3.4.16 Recreation

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☑

Environmental Setting

Public access to the Malone Road Project site and Blossom Hill Road Project site is prohibited, and there are no recreational trails or other facilities within the immediate vicinity of either Project site. As noted in Section 3.4.16, there are recreational parks within the vicinity of both Project sites. However, neither Project site is located within a recreational area, and no trails or other recreational facilities are located near the Project sites or their access routes.

Discussion

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. As discussed in Section 3.4.15, Public Services, there are city parks located within 1 mile of both the Malone Road Project site and the Blossom Hill Road Project site. However, no neighborhood or regional parks are located in the immediate vicinity of either Project site. The proposed Project would include activities related to bank stabilization at two locations and would not result in the increased use of parks or other recreational facilities. As discussed in Section 3.4.14, Population and Housing, the Project does not include components that would induce population growth near the Project sites. Therefore, no impact would occur.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The proposed Project does not require the construction or expansion of recreational facilities, nor does it include recreational facilities as part of the Project components. Therefore, no impact would occur.

Mitigation Measures

No mitigation measures would be required.

3.4.17 Transportation

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☑
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☑	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑
d) Result in inadequate emergency access?	☐	☐	☐	☑

Environmental Setting

Both Project sites are located within the City of San José, on Valley Water fee title or easement property.

The Malone Road Project site is near the intersection of Malone Road and Almaden Road and would be accessed through the available adjacent vacant district parcel along the west bank, upstream of Malone Road. The Project would also utilize the creek for access by constructing a temporary ramp into the channel from the adjacent vacant lot.

The Blossom Hill Road Project site is near Blossom Hill Road. Construction vehicles and equipment would access the Blossom Hill Road Project site along the western maintenance access road along the top of the bank and north of the Blossom Hill Road bridge. The Blossom Hill Road Project site can also be accessed from the depressed maintenance road south of the Blossom Hill Road bridge. Staging at the Malone Road Project site would be confined to Valley Water fee title properties along the top of the west bank (APN 439-26-062) upstream of Malone Road. Staging at the Blossom Hill Road Project site would be confined to a Valley Water fee title property along the top of the west bank (APN 458-14-034) downstream of Blossom Hill Road.

The proposed Project would involve bank stabilization at the Malone Road Project site and Blossom Hill Road Project site, where instream structures along the Guadalupe River have experienced erosion and subsequent damage to the embankment and potential risk is posed to neighboring properties. Construction equipment would access the Project sites using routes described above. Local roads would be minimally affected by transportation of crews and equipment and would not need to be closed during construction activities.

Discussion

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

No Impact. Existing roadways would be utilized to transport personnel, equipment, and materials to and from the Project sites and would add a maximum of four additional truck trips per day between both Project sites. Valley Water would implement BMP TR-1 (Incorporate Public Safety Measures) to avoid and minimize any potential transportation impacts when working in roadways. Fences, barriers, lights, flagging, guards, and signs would be installed to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof (BMP TR-1). The increase in vehicle trips as result of the Project would not be large enough to conflict with an applicable plan, ordinance, or policy or impact the performance of the local circulation system. Therefore, no impact would occur.

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

Less than Significant Impact. Vehicle miles traveled (VMTs) would not substantially increase as a result of the proposed Project. Approximately four truck trips per day are anticipated during the 4-month period. The Project would generate approximately 3,440 VMTs throughout the 4-month construction period. While there would be a temporary increase in the number of trucks accessing and traveling to the two Project sites, the increase would not represent a substantial impact to the area's vehicle traffic. Projects that generate or attract fewer than 110 trips per day generally may be assumed to result in a less-than-significant transportation impact (OPR 2018). Based on this analysis, the Project would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). Therefore, impacts would be less than significant.

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

No Impact. There would be no sharp curves, dangerous intersections, or farm equipment used during transport of materials or equipment to the Project sites, nor would there be any design features or uses that would significantly increase hazards. The proposed Project would involve bank stabilization activities within two Project sites, both of which are located on Valley Water fee title or easement property and not on any local roadways. Therefore, no impact would occur.

d) Result in inadequate emergency access?

No Impact. For the proposed Project, workers would use local streets and access roads to access the Project sites, and a maximum of eight workers would be staffed at each Project site. During the 4-month construction period, up to 300 truck trips would be required for the Malone Road Project site and up to 150 trips would be required at the Blossom Hill Road Project site. Given the small number of construction-related trips and the short duration of the Project, obstruction or impediment of emergency access to the surrounding area is not expected during Project construction. Additionally, construction and staging equipment would be located adjacent to the Project sites on Valley Water fee title or easement property, eliminating the need to use the local roadways for regular access. Fences, barriers, lights, flagging, guards, and signs would be

installed to provide adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof (BMP TR-1). Therefore, the Project would not prevent emergency response vehicle access that would result in inadequate emergency access, and no impact would occur.

Mitigation Measures

No mitigation measures would be required.

3.4.18 Tribal Cultural Resources

Would the project?	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	☐	☐	☑	☐
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☑	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☑	☐

Environmental Setting

The proposed Project sites are located in two locations in the City of San José. The Malone Road Project site and the Blossom Hill Road Project site are both located along the Guadalupe River, near urbanized areas of San José. Both proposed Project sites would be located within previously disturbed areas.

Discussion

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- **i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or**
- **ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. The proposed Project would involve ground disturbance in previously disturbed areas. As these areas have been previously disturbed, the likelihood of unearthing new cultural resources would be unlikely. However, the proposed Project would implement BMPs to ensure the protection of potentially present culturally significant resources.**

Less than Significant Impact. The proposed Project would consist of erosion repair activities at the Malone Road and Blossom Hill Road Project sites, including the installation of an active dewatering system, debris removal and tree removal, replacing the failed gabion basket structure through rock slope protection, with two grade control features along the channel bed, and excavation work. Project activities would involve excavation in ground previously disturbed for the flood protection work involved in the creation of the existing facilities. While it is unlikely that unknown tribal cultural resources would be discovered on either Project site, the proposed Project would implement BMP CU-1 (Accidental Discovery of Archaeological Artifacts or Burial Remains) as well as AMM CR-1 (Pre-construction Worker Awareness Training).

BMP CU-1 provides guidance for the accidental discovery of historical or unique artifacts during construction. Should artifacts be found, work would halt at the site, and a "no work" zone (100-foot buffer) would be established until a qualified archaeologist assesses the significance of the artifact. If a find is deemed significant, the archaeologist would implement measures to protect the artifact. If avoidance is not possible, the archaeologist would develop an Action Plan, including a Data Recovery Plan, if necessary, to minimize impacts. AMM CR-1 requires construction personnel to undergo a cultural sensitivity training that includes guidance on encountering tribal cultural resources during construction. The training would also inform construction personnel on the types of tribal cultural resources that may be present at the Project sites as well as the proper procedures in the case of accidental discovery of tribal cultural resources. With implementation of BMP CU-1 and AMM CR-1, impacts on tribal cultural resources would be less than significant.

Mitigation Measures

No mitigation measures would be required.

3.4.19 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☑
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☑	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☑	☐
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☑	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☑	☐

Environmental Setting

The two proposed Project sites are located in separate areas within the City of San José and would involve bank stabilization work at the Malone Road Project site and Blossom Hill Road Project site. Pacific Gas and Electric (PG&E) provides electrical power services within the City of San José. PG&E also operates natural gas systems, electric systems, a hydroelectric network, and an end-to end hydrogen gas transmission facility (PG&E n.d.-c; n.d.-b); however, most of these systems are not in close proximity to the Project sites. At the Malone Road Project site, PG&E operates assets that comprise of guy wires and anchors embedded into the west slope of the bank. Valley Water is actively working with PG&E to have these guy wires and anchors removed or relocated from the proposed project site by early 2025.

There is a PG&E operated natural gas pipeline that traverses under Blossom Hill Road near the Blossom Hill Road Project site (PG&E n.d.-a). Both the Malone Road Project site and Blossom

Hill Road Project site are located within the PG&E service territory; however, neither Project site has existing utility infrastructure within the Project areas.

Discussion

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

No Impact. The proposed Project would consist of erosion repair activities at the Malone Road Project site and the Blossom Hill Road Project site, including the installation of an active dewatering system, debris removal and tree removal, and replacing the failed gabion basket structure through rock slope protection, with two grade control features along the channel bed. Once completed, the stabilized bank in these areas would continue to operate as previously designed to prevent future erosion and flooding. The Project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities such that significant environmental effects could result. Therefore, no impact would occur.

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

Less than Significant Impact. It is anticipated that Project activities would require one water truck per week (approximately 2,000 gallons of water per truck load) for each Project site to support dust control. This would total approximately 22,900 gallons of water per site over the course of the 4-month period. Water required for construction activities would be obtained by connecting to existing permitted hydrants near the Project sites. The Project sites are within the San Jose Water Company (SJWC) service area and would require coordination with the SJWC for temporary construction water use. SJWC's Montevina Filter Plant is capable of producing approximately 30 million gallons of water per day. Accordingly, the SJWC would have sufficient water supplies to adequately serve the water needs for the proposed Project and reasonably foreseeable future development during normal, dry and multiple dry years. Therefore, impacts would be less than significant.

c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less than Significant Impact. The proposed Project may require temporary sanitary facilities for construction staff during the 4-month period. The amount of water that would be generated by any temporary sanitary facilities would be minimal and would not result in an increased demand for wastewater treatment services. The temporary sanitary facilities would be provided through a third party responsible for regular cleaning and emptying of the facilities. The provider would be contracted with an appropriate discharge facility. The Project would not require determination of capacity by any wastewater treatment provider. Therefore, impacts would be less than significant.

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than Significant Impact. Solid waste generated from Project activities such as excavation spoils, vegetation removal, and general refuse would be disposed of at a local landfill. To the extent feasible, recycling of materials and mulching of removed vegetation would be implemented. An estimated 400 CY of excavated material, vegetation, and other construction refuse is estimated to be hauled off site over the life of the project. This would average out to approximately 4.17 CY per day over the 86-day construction period. The nearest landfill to both Project sites is the Guadalupe Sanitary Landfill. This landfill is approximately 5.9 miles southwest of the Malone Road Project site and 3.1 miles southwest of the Blossom Hill Road Project site.

The Guadalupe Sanitary Landfill has a maximum daily throughput of 3,650 tons per day and has a remaining capacity of approximately 7,518,220 tons through 2043 (CalRecycle, n.d.). Considering the minimal amount of solid waste anticipated to be generated by construction of the Project in comparison to the landfill's capacity, Project construction waste disposal needs would not exceed the remaining capacity of the landfill. The Project would not generate solid waste post construction. Therefore, the Project would not generate solid waste in excess of state or local standards or in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals, and impacts would be less than significant.

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

Less than Significant Impact. The proposed Project's overall potential to increase waste generation would be limited to the 4-month duration. Project-related wastes, including concrete, dirt, and trees and vegetation generated by the Project would be handled and disposed of in accordance with all applicable federal, state, and local regulations and policies. Much of this material is recyclable by the receiving landfill and would be processed for reuse to the extent feasible, which would further divert waste materials away from otherwise permanent disposal. Therefore, the Project would comply with applicable federal, state, and local statutes and regulations regarding solid waste, including local recycling programs, and impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

3.4.20 Wildfire

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☑	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☑	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☑	☐

Environmental Setting

The City of San José is served by the San Jose´ Fire Department and the California Department of Forestry and Fire Protection (CAL FIRE). Both Project sites are located within the City of San José and in a heavily urbanized area. Neither Project site is located within the wildland–urban interface (WUI) zone as designated by Santa Clara County (County of Santa Clara Department of Planning and Development, n.d.). Additionally, neither the Malone Road Project site nor the Blossom Hill Road Project site are located within an area designated as a Sate Responsibility Area (SRA) or Local Responsibility Area (LRA) Fire Hazard Severity Zone (FHSZ) (CAL FIRE, n.d.). While fire risk is identified as low for the Project sites, it is never zero. Valley Water recognizes that in dry years, vegetation surrounding the Project site may be susceptible to ignition.

Discussion

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

No Impact. The Project sites are not within a designated WUI or an SRA or LRA FHSZ. As discussed in Section 3.4.17, Transportation, transportation of materials, personnel, and equipment would result in only four truck trips per day. Therefore, the proposed Project would not substantially impair an adopted emergency response plan or emergency evacuation plan, and no impacts would occur.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than Significant Impact. Neither Project site is within a designated WUI or an SRA or LRA FHSZ. The proposed Project would implement BMP HM-12, which incorporates fire prevention measures such as outfitting equipment with spark arrestors. The proposed Project would involve embankment stabilization activities lasting 4 months. The related Project activities would not exacerbate wildfire risks so as to expose Project occupants or residents to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Therefore, impacts would be less than significant.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Less than Significant Impact. The Project sites are not within a designated WUI or a FHSZ. Project activities would require river bank stabilization work at two locations. The proposed Project would not require installation of associated infrastructure such as roads, emergency water sources, power lines, or other utilities that may exacerbate fire risk or create temporary or ongoing impacts to the environment. Therefore, impacts would be less than significant.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less than Significant Impact. The Project sites are not within a WUI or any designated SRA or LRA FHSZ. As discussed in Section 3.4.19, Utilities and Service Systems, the Project would not alter the existing drainage or significantly impact drainage systems at either Project site. The proposed Project would stabilize the river banks near Malone Road and Blossom Hill Road and would not significantly increase water flow through the river system. Consequently, these areas would become less susceptible to landslides and flooding. The Project would not expose people or structures to significant risks from runoff, post-fire slope instability, or drainage changes. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

3.4.21 Mandatory Findings of Significance

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☑	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☑	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

Discussion

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant with Mitigation. While the proposed Project would result in potentially significant impacts related to air quality, biological resources, noise, and geology and soils, Valley Water's implementation of applicable BMPs, AMMs, and mitigation measures as proposed in this MND would avoid or minimize these potentially significant impacts such that the Project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. Therefore, with implementation of BMPs, AMMs and mitigation measures, Project impacts would be less than significant.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less than Significant Impact. Section 15064(h)(1) of CEQA Guidelines states that a lead agency shall consider whether the cumulative impact is significant and the incremental effects of the Project are cumulatively considerable. A lead agency may determine that a Project's incremental contribution would be less than cumulatively considerable when one or more of the following occur: 1) The contribution would be rendered less than cumulatively considerable through implementation of mitigation measures; 2) The Project would comply with the requirements of a previously approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the Project's cumulative effects; and/or 3) The Project's incremental effects would be so small that the environmental conditions would be essentially the same regardless of whether the Project is implemented.

Cumulative Projects identified that are ongoing at present or anticipated in the reasonably foreseeable future include annual and on-going in-stream structure maintenance activities. Given the minor nature and infrequency of the maintenance activities as well as the short duration of the proposed Project activities, when considered together, impacts from the proposed Project and ongoing maintenance activities would not be significant. In addition, implementation of BMPs, AMMs, and mitigation measures as described in the above analyses would ensure that the Project's incremental impacts on the environment would not be cumulatively considerable. Therefore, impacts would be less than significant.

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

Less than Significant Impact. The above analyses demonstrate that the proposed Project would not result in significant impacts with the incorporation of BMPs and AMMs, as outlined in Valley Water's SMP, and mitigation measures. While the analyses find that the Project could result in some adverse impacts related to air quality and geology and soils, implementation of BMPs, AMMs, and mitigation measures would either avoid such impacts or reduce them to a less than significant level. The proposed Project would not result in changes to existing land use, and all potential effects that could impact human beings would be temporary. The long-term effects of the proposed Project would be beneficial as the Project would increase the seismic resistance of bank stabilization along the Guadalupe River and prevent ongoing erosion and subsequent damage to the embankment and, potentially, to neighboring properties. With implementation of BMPs, AMMs, and mitigation measures, the Project would not cause substantial adverse effects on human beings either directly or indirectly. The impact would be less than significant.

4 List of Contributors

4.1 List of Contributors

Table 6-4.1-1 Valley Water Contributors

Contributor	Role
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Lawrence Truong	Associate Environmental Planner

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APPENDIX A

Air Quality Technical Report

Air Quality Technical Report

Valley Water Guadalupe Riverbank Stabilization Project

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Attachment A: Emissions Inventory Supporting Information

Attachment B: Health Risk Assessment Methodology, Assumptions, and Detailed Results

1.0 INTRODUCTION

This document presents the results of an air quality analysis prepared for the Santa Clara Valley Water District (Valley Water) Guadalupe Riverbank Stabilization (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. Other issues related to air emissions covered in this document include the assessment of emissions related to air quality health impacts (health risk assessment or HRA). 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 and health risk assessment are provided in:

- **Attachment A: Construction Emissions Inventory Supporting Information**
- **Attachment B: Health Risk Assessment Methodology, Assumptions, and Detailed Results**

The HRA focuses on health impacts on existing residences from emissions of toxic air contaminants (TAC)[1] such as diesel particulate matter (DPM)[2] from diesel equipment and haul truck emissions associated with the project construction activities. The HRA was conducted to determine the health impacts, in terms of excess cancer risk and non-cancer hazards, using the significance levels identified by the Bay Area Air Quality Management District (BAAQMD)'s *CEQA Air Quality Guidelines*.[3] In accordance with the BAAQMD *CEQA Air Quality Guidelines*, the HRA also evaluated concentrations of particulate matter equal to or less than 2.5 micrometers (fine particulate or $PM_{2.5}$ as combustion exhaust and fugitive dust). The HRA was prepared based on the California Office of Environmental Health Hazard Assessment (OEHHA)'s *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.*[4]

2.0 PROJECT OVERVIEW

Valley Water is currently proposing the Guadalupe Riverbank Stabilization Project. The proposed project involves bank stabilization at two locations where in-stream structures along the Guadalupe River have experienced erosion and subsequent damage to the embankment and potential neighboring properties.

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[1] Toxic air contaminants are a broad class of compounds known to cause morbidity or mortality. TAC are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., gasoline service stations, dry cleaners). TAC are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TAC are regulated at the regional, state, and federal level.

[2] In 1998, the California Air Resources Board classified diesel particulate matter as a toxic air contaminant, citing its potential to cause cancer and other health problems. The US Environmental Protection Agency concluded that long-term exposure to diesel engine exhaust is likely to pose a lung cancer hazard to humans and can also contribute to other acute and chronic health effects.

[3] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, April 20, 2023, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

[4] Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, February 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html

The in-stream structures are located at the Guadalupe River crossings at Malone Road and Blossom Hill Road in the City of San Jose. The proposed project would consist of repairs needed to address existing broken concrete lined channel, failed gabion baskets, and removal of overgrown vegetation and trees. The repairs would span approximately 480 feet along the length of the channel. The proposed project would prevent ongoing erosion and subsequent damage to the embankment and potential neighboring properties.

The proposed project sites are located within the City of San Jose, on Valley Water property, as shown in **Figure 1: Regional Overview**. Repair work would occur at the Guadalupe River crossing upstream of Malone Road, Guadalupe River crossing downstream of Malone Road, and at the Guadalupe River Crossing located at Blossom Hill Road. The Guadalupe River crossing locations where project work would occur are shown in **Figure 2: Project Location – Blossom Hill Road** and **Figure 3: Project Location – Malone Road**.

Figure 1 Regional Overview



Figure 2 Project Location - Blossom Hill Road

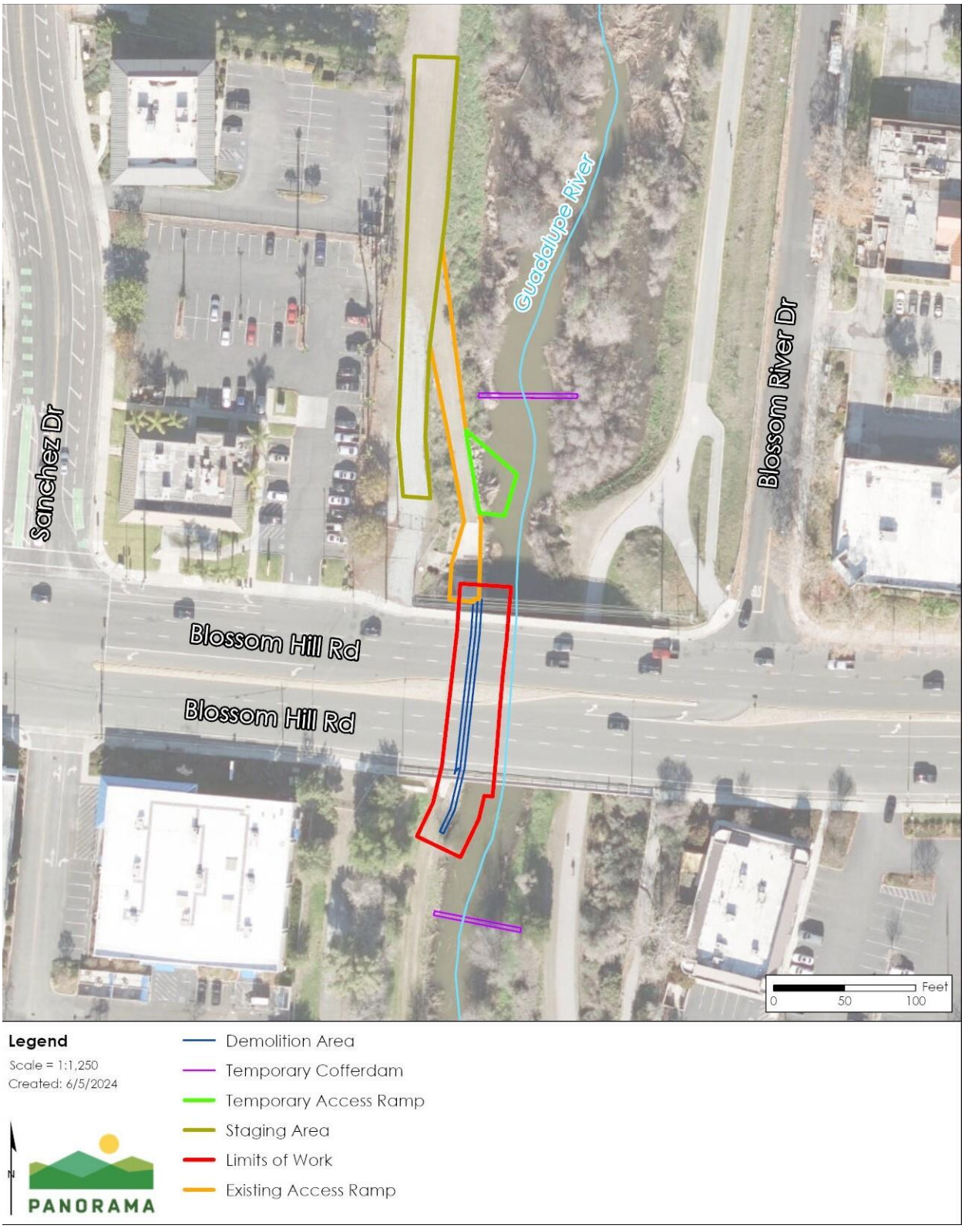


Figure 3 Project Location - Malone Road



3.0 ANALYSIS METHODOL0GY

Intermittent (short-term construction emissions that occur from activities, such as 1) concrete slope paving/gabion removal, 2) grading and excavation , 3) drainage, utilities, and subgrade , and 4) concrete slope paving, and 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[5] emissions such as carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), volatile organic compounds (VOC) as reactive organic gases (ROG), particulate matter less than 10 micrometers (coarse particulate or PM_{10}), and particulate matter less than 2.5 micrometers (fine particulate or $PM_{2.5}$).

Regulatory models used to estimate air quality impacts include:

- California Air Pollution Officers Association (CAPCOA) CalEEMod (California Emissions Estimator Model Version 2022.1)[6] 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 pollutant 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.
- AERMOD (American Meteorological Society/USEPA Regulatory Model, Version 23132) is an atmospheric dispersion model which can simulate point, area, volume, and line emissions sources and has the capability to include simple, intermediate, and complex terrain along with meteorological conditions and multiple receptor locations.[7,8] AERMOD is commonly executed to yield 1-hour maximum and annual average concentrations (in $\mu g/m^3$) at each receptor.

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

[5] 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.

[6] California Air Pollution Officers Association, *California Emissions Estimator Model User Guide Version 2022.1*, April 2022, http://www.caleemod.com/

[7] US Environmental Protection Agency, Preferred/Recommended Models, *AERMOD Modeling System*, https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models#aermod

[8] Title 40 CFR Part 51, *Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions; Final Rule,* https://www.epa.gov/sites/default/files/2020-09/documents/appw_17.pdf

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 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 the 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.[9]

[9] Bay Area Air Quality Management District, *Climate, Physiography, and Air Pollution Potential – Bay Area and Its Subregions*.

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_3) 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_3 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_x. VOC and NO_x are known as precursor compounds for O_3. Substantial ozone production generally requires O_3 precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. O_3 is a regional air pollutant because it is not emitted directly by sources but is formed downwind of sources of VOC and NO_x under the influence of wind and sunlight. O_3 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_2) are the most significant air pollutants generally referred to as NO_x. Nitric oxide is a colorless and odorless gas that is relatively harmless to humans, quickly converts to NO_2 and can be measured. Nitrogen dioxide has been found to be a lung irritant capable of producing pulmonary edema. Inhaling NO_2 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_2), 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 effect. 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_{10} and $PM_{2.5}$ consist of airborne particles that measure 10 micrometers or less in diameter and 2.5 micrometers or less in diameter, respectively. PM_{10} and $PM_{2.5}$ 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_{10} and $PM_{2.5}$, are a health concern particularly at levels above the federal and California ambient air quality standards. $PM_{2.5}$ (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_{10} could reduce premature mortality rates by 6,500 cases per year.

Sulfur Dioxide

SO_2 is a combustion product of sulfur or sulfur–containing fuels such as coal and diesel. SO_2 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_2S 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_2S 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*.[10] 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.
- 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

[10] 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

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_2, ozone, SO_2, PM_{10}, and $PM_{2.5}$. The monitoring station at 1007 Knox Avenue measures CO, NO_2, ozone, and $PM_{2.5}$. **Table 1: Air Quality Data Summary (2021 - 2023)** summarizes the most recent three years of data (2021 through 2023) from the BAAQMD's 1007 Knox Avenue monitoring station for CO, NO_2, and $PM_{2.5}$ and 158 East Jackson Street monitoring station for ozone, SO_2, and PM_{10} (although not available for 2023).

Table 1: Air Quality Data Summary (2021 - 2023)

Pollutant	Monitoring Data by Year			
	Standard[a]	**2021**	**2022**	**2023**
Ozone				
Highest 1 Hour Average (ppm)[b]	0.090/-	**0.098**	**0.090**	0.087
Highest 8 Hour Average (ppm)[b]	0.070	**0.084**	**0.074**	0.068
Nitrogen Dioxide				
Highest 1 Hour Average (ppm)[b]	0.180/0.100	0.0485	0.0508	0.0482
Annual Average ($\mu g/m^3$) [b]	0.030/0.053	0.0120	0.0134	0.0113
Carbon Monoxide				
Highest 1 Hour Average (ppm)[b]	20/35	1.9	1.8	2.2
Highest 8 Hour Average (ppm)[b]	9/9	1.5	1.5	1.3
Particulate Matter (PM_{10})				
Highest 24-Hour Average ($\mu g/m^3$)[b]	50/150	45.0	44.0	NA
State Annual Average ($\mu g/m^3$)[b]	20/-	19.7	**20.8**	NA
Particulate Matter ($PM_{2.5}$)				
Highest 24-Hour Average ($\mu g/m^3$)[b]	-/35	**45.0**	34.7	**46.2**
State Annual Average ($\mu g/m^3$)[b]	12/9	10.9	8.74	6.50
Sulfur Dioxide				
Highest 1 Hour Average (ppm)[b]	0.25/0.75	0.0018	0.002	0.036
Highest 3 Hour Average (ppm)[b]	0.04/0.14	0.0015	0.0016	0.012

NOTES: Values in **bold** 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; $\mu g/m^3$ = 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 2021 and 2022. The annual PM_{10} standard was exceeded in 2022. The 24-hour $PM_{2.5}$ standard was exceeded in 2021 and 2023. PM_{10} and $PM_{2.5}$ 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_{10} standards, and for the state and national (annual average and 24-hour) $PM_{2.5}$

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.[11]

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.

[11] 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_Retrospective_April2014.ashx?la=en

The projects are within the city of San Jose which is part of the seven CARE program impacted communities in the Bay Area.[12] 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 163 cancer risk per million persons.[13]

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*.[14] 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 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

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[12] Community Air Risk Evaluation Program, *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area,* March 2014

[13] Bay Area Air Quality Management District, *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area,* March 2014

[14] 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

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.

Adjacent residential neighborhoods and urban development surround both project sites. The nearest residences to the Malone Road project site are approximately 50 feet surrounding the site along Malone Road and Almaden Road (from the upstream Cofferdam with Sump Pump). The nearest residences to the Blossom Hill Road project site are approximately 450 feet northeast along Blossom River Drive (from the temporary cofferdam). The Avana Almaden Apartments are also located 760 feet to the northwest of the project site.

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).[15] 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.

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.

[15] 2019 CEQA Statutes and Guidelines, http://resources.ca.gov/ceqa/docs/2019_CEQA_Statutes_and_Guidelines.pdf

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_x, or $PM_{2.5}$ or 82 pounds per day of PM_{10};
- Average daily operation emissions of 54 pounds per day of ROG, NO_x, or $PM_{2.5}$ or 82 pounds per day of PM_{10}; or result in maximum annual emissions of 10 tons per year of ROG, NO_x, or $PM_{2.5}$ or 15 tons per year of PM_{10}; 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 Thresholds	Daily Operational Thresholds	Annual Operational Thresholds
Criteria Air Pollutants			
ROG	54	54	10
NOx	54	54	10
PM_{10}	82 (exhaust only)	82	15
$PM_{2.5}$	54 (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 $PM_{2.5}$	0.3 µg/m^3		
Cumulative Health Risk and Hazards			
Excess Cancer Risk	100 per million		
Chronic Hazard Index	10.0		
Acute Hazard Index	10.0		
Incremental Annual Average $PM_{2.5}$	0.8 µg/m^3		

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

6.0 EMISSIONS INVENTORY

Intermittent (short-term construction emissions that occur from activities, such as site-grading, trenching, and paving) 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_{10} and $PM_{2.5}$) 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_x, CO, PM_{10}, and $PM_{2.5}$) 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_{10} 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_{10}, 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 5 p.m. Monday through Friday. Project construction is anticipated to begin early June of 2025 and be completed in October of 2025 (a total of 85 construction days). **Table 3: Construction Schedule** provides the construction schedule by construction activity.

For the Malone Road project site, an estimated 6,440 cubic yards of materials requiring offsite disposal and 1,050 cubic yards of materials would be imported to the site. Project construction would result in a total of 0.37 acres of ground disturbance at the project site. For the Malone Road project site, approximately 300 haul truck trips would be required.

For the Blossom Hill project site, an estimated 4,080 cubic yards of materials requiring offsite disposal and 250 cubic yards of materials would be imported to the site. Project construction would result in a total of 0.10 acres of ground disturbance at the project site. For the Blossom Hill project site, approximately 150 haul truck trips would be required.

The haul trucks would include mobilization and demobilization of construction equipment, setting up dewatering equipment, transporting fill for temp ramp, removing trees within project footprint, removing concrete slope and footing material, delivering gravel bottom fill material and rock rip-rap, and concrete trucks and pumps. Blossom Hill Road round-trip distance of 40 miles and Malone Road round-trip distance of 30 miles from Stevens Creek Quarry. Granite Rock is approximately 100 miles round-trip to project sites. Due to limited staging areas at both sites, contractors may likely only stockpile small quantities of rock on site, which should result in lower trips per day.

Table 3: Construction Schedule

Construction Activity	Start	End	Working Days
Concrete Slope Paving/Gabion Removal	6/15/2025	6/30/2025	10
Grading and Excavation	7/1/2025	7/21/2025	15
Drainage, Utilities, and Subgrade	7/22/2025	9/1/2025	30
RSP, Concrete Slope Paving, and Finished Grading	9/2/2025	10/15/2025	30

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 at each project site would comprise cofferdams, two 50 hp generators, and 6-inch-to10-inch sump pumps with approximately 700 feet of bypass pipes and hoses. Earthen cofferdams would be installed upstream and downstream of the project sites, 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 banks

Table 4: Estimated Construction Equipment Usage

Construction Activity	Equipment	Amount	Daily Hours	HP
Concrete Slope Paving/Gabion Removal	Excavator	2	8	38
Concrete Slope Paving/Gabion Removal	Tractors/Loaders/Backhoes	4	8	84
Concrete Slope Paving/Gabion Removal	Dump Trucks	10	4	376
Concrete Slope Paving/Gabion Removal	Water Truck/Sweeper	1	4	376
Concrete Slope Paving/Gabion Removal	Generator	2	24	48
Grading and Excavation	Excavator	2	8	38
Grading and Excavation	Tractors/Loaders/Backhoes	4	8	84
Grading and Excavation	Dump Trucks	10	4	376
Grading and Excavation	Water Truck/Sweeper	1	4	376
Grading and Excavation	Generator	2	24	48
Drainage, Utilities, and Subgrade	Excavator	2	8	38
Drainage, Utilities, and Subgrade	Tractors/Loaders/Backhoes	4	8	84
Drainage, Utilities, and Subgrade	Truck-mounted Crane	1	4	367
Drainage, Utilities, and Subgrade	Water Truck/Sweeper	1	2	376
Drainage, Utilities, and Subgrade	Generator	2	24	48
RSP, Concrete Slope Paving, and Finished Grading	Excavator	2	8	38
RSP, Concrete Slope Paving, and Finished Grading	Tractors/Loaders/Backhoes	4	8	84
RSP, Concrete Slope Paving, and Finished Grading	Compactor	1	4	36
RSP, Concrete Slope Paving, and Finished Grading	Truck-mounted Crane	1	4	367
RSP, Concrete Slope Paving, and Finished Grading	Concrete Trucks	2	4	376
RSP, Concrete Slope Paving, and Finished Grading	Concrete Pumper	1	4	82
RSP, Concrete Slope Paving, and Finished Grading	Generator	2	24	48

Note: Additionally, eight construction worker vehicle trips will occur during each construction phase and four pickup trucks will be used 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_{10} and $PM_{2.5}$ 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 Valley Water BMPs**. Table 5: Estimated Average Daily Unmitigated 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. All construction-related emissions would be below the BAAQMD significance thresholds. **Section 10** describes the health risk assessment which results in the need for **Mitigation Measure AQ-2** and incorporates into the construction emissions inventory reported in **Table 6: Estimated Average Daily Mitigated Construction Emissions**. Mitigated CO emissions are greater than the unmitigated CO emissions due to control technologies that are focused on reducing ROG, NOx, PM_{10}, and $PM_{2.5}$ emissions which have a reverse effect on CO emissions. As a result of the health risk assessment, **Mitigation Measure AQ-2** is required for the Malone Road project site and not the Blossom Hill Road project site.

Using standard fuel consumption estimates, construction activities would require approximately 58,560 gallons of diesel fuel per year (haul trucks and offroad equipment).[16]

Table 5: Estimated Average Daily Unmitigated Emissions (pounds)

Project	ROG	NOx	PM_{10}	$PM_{2.5}$	CO
Blossom Hill	3.07	27.2	0.84	0.77	31.7
Malone Road	3.08	27.7	0.85	0.78	32.0
Grand Total	**6.14**	**54.9**	**1.69**	**1.55**	**63.7**
Significance Threshold	54	54	82	54	---
Significant (Yes or No)?	No	**Yes**	No	No	No

SOURCE: CARB CalEEMod

Table 6: Estimated Average Daily Mitigated Emissions (pounds)

Project	ROG	NOx	PM_{10}	$PM_{2.5}$	CO
Blossom Hill	0.82	15.2	0.14	0.13	40.5
Malone Road	0.83	15.8	0.15	0.14	40.8
Grand Total	**1.66**	**31.0**	**0.29**	**0.27**	**81.3**
Significance Threshold	54	54	82	54	---
Significant (Yes or No)?	No	No	No	No	No

SOURCE: CARB CalEEMod

[16] Fuel usage is estimated using the CalEEMod output for CO_2 and a 10.19 $kgCO_2$/gallon (diesel) conversion factor, https://www.eia.gov/environment/emissions/co2_vol_mass.php

Best Management Practice AQ-1:

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.
- 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:

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.

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.

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

The HRA was conducted following methodologies in OEHHA's *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.[17] This was accomplished by applying the estimated concentrations at the receptors analyzed to the established cancer risk estimates and acceptable reference concentrations for non-cancer health effects. **Attachment B: Health Risk Assessment Methodology, Assumptions, and Detailed Results** provides additional methodologies and assumptions used within the health risk assessment.

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 involves construction activities that would last for approximately 86 days (approximately three months). The project would constitute a new emission source of DPM and $PM_{2.5}$ due to its construction activities. Therefore, the HRA was conducted for the construction activities. Studies have demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk.

Health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. Individual cancer risk is the likelihood that a person exposed to air toxic concentrations over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. The maximally exposed individual (MEI) represents the worst–case risk estimate, based on a theoretical person continuously exposed for a lifetime at the point of highest compound concentration in the air. This is a

[17] Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, February 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html

highly conservative assumption since most people do not remain at home all day and on average residents change residences every 11 to 12 years. In addition, this assumption assumes that residents are experiencing outdoor concentrations for the entire exposure period.

The HRA analyzes the incremental cancer risks to sensitive receptors in the vicinity of the project sites, using emission rates (in pounds per hour) from the construction activities. DPM (reported as combustion exhaust emissions of $PM_{2.5}$) emission rates were input into the USEPA's AERMOD atmospheric dispersion model to calculate ambient air concentrations at receptors in the project vicinity. The HRA is intended to provide a worst–case estimate of the increased exposure by employing a standard emission estimation program, an accepted pollutant dispersion model, approved toxicity factors, and conservative exposure parameters.

In accordance with OEHHA *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments,* the HRA was accomplished by applying the highest estimated concentrations of TAC at the receptors analyzed to the established cancer potency factors and acceptable reference concentrations for non-cancer health effects. Increased cancer risks were calculated using the modeled DPM concentrations and OEHHA-recommended methodologies for both child exposure (3rd trimester through two years of age) and adult exposure. The cancer risk calculations were based on applying the OEHHA-recommended age sensitivity factors and breathing rates, as well as fraction of time at home and an exposure duration of 30 years, to the DPM concentration exposures. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing air pollutants.

These conservative methodologies overestimate both non-carcinogenic and carcinogenic health risk, possibly by an order of magnitude or more. Therefore, for carcinogenic risks, the actual probabilities of cancer formation in the populations of concern due to exposure to carcinogenic pollutants are likely to be lower than the risks derived using the HRA methodology. The extrapolation of toxicity data in animals to humans, the estimation of concentration prediction methods within dispersion models; and the variability in lifestyles, fitness and other confounding factors of the human population also contribute to the overestimation of health impacts. Therefore, the results of the HRA are highly overstated.

Construction Cancer Risk at Existing Residences

The following describes the HRA results associated with existing residential receptors due to unmitigated construction activities. **Table 7: Estimated Unmitigated Construction Health Impacts at Existing Receptors** presents the unmitigated health impacts due to construction activities.

Table 7: Estimated Unmitigated Construction Health Impacts at Existing Receptors

Source	Cancer Risk (child/adult)	Hazard Impact	$PM_{2.5}$ Concentration
Blossom Hill	0.64/0.03	<0.01	0.01
Significance Threshold	10.0	1.00	0.30
Potentially Significant (Yes or No)?	No	No	No
Malone Road	**38.8/1.74**	0.06	**0.36**
Significance Threshold	10.0	1.00	0.30
Potentially Significant (Yes or No)?	**Yes**	No	**Yes**

For the Blossom Hill project, the maximum cancer risk from unmitigated construction emissions for a residential-adult receptor would be 0.03 per million and for a residential-child receptor would be 0.64 per million. For the Blossom Hill project, the maximum exposed individual residence (MEIR) is located within the Avana Almaden Apartments to the northwest of the project site. Thus, the cancer risk due to unmitigated construction activities are less than the BAAQMD threshold of 10 per million and would be less than significant. For the Blossom Hill Road project, **Mitigation Measure AQ-2**.is not required to demonstrate a less than signifanct health impact.

For the Malone Road project, the maximum cancer risk from unmitigated construction emissions for a residential-adult receptor would be 1.74 per million and for a residential-child receptor would be 38.8 per million at the MEIR. For the Malone Road project, the MEIR is located at a residence near the downstream project feature. Thus, the cancer risk due to unmitigated construction activities are greater than the BAAQMD threshold of 10 per million and would be potentially significant.

Mitigation Measure AQ-2: The applicant shall implement the following measures during construction to further reduce construction exhaust emissions:

> All construction equipment larger than 50 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.[18]
>
> 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 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.

Table 8: Estimated Mitigated Construction Health Impacts at Existing Receptors presents the health impacts with the implementation of **Mitigation Measure AQ-2**.

[18]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.

For the Malone Road project, the maximum cancer risk from mitigated construction emissions for a residential-adult receptor would be 0.31 per million and for a residential-child receptor would be 6.97 per million at the MEIR. Thus, the cancer risk due to mitigated construction activities are less than the BAAQMD threshold of 10 per million and would be less than significant with mitigation.

Table 8: Estimated Mitigated Construction Health Impacts at Existing Receptors

Source	Cancer Risk (child/adult)	Hazard Impact	$PM_{2.5}$ Concentration
Blossom Hill	0.11/<0.01	<0.01	<0.01
Significance Threshold	10.0	1.00	0.30
Potentially Significant (Yes or No)?	No	No	No
Malone Road	6.97/0.31	0.01	0.13
Significance Threshold	10.0	1.00	0.30
Potentially Significant (Yes or No)?	No	No	No

Construction Non-Cancer Health Hazard at Existing Residences

Both acute (short-term) and chronic (long-term) adverse health impacts unrelated to cancer are measured against a hazard index (HI), which is defined as the ratio of the predicted incremental DPM exposure concentration from the project to a reference exposure level (REL) that could cause adverse health effects. The REL are published by OEHHA based on epidemiological research. The ratio (referred to as the Hazard Quotient [HQ]) of each non-carcinogenic substance that affects a certain organ system is added to produce an overall HI for that organ system. The overall HI is calculated for each organ system. The impact is considered to be significant if the overall HI for the highest-impacted organ system is greater than 1.0.

Of note, there are a cancer potency factor and a chronic hazard index, but no acute hazard index associated with DPM.[19] The chronic reference exposure level for DPM was established by the California OEHHA[20] as 5 $\mu g/m^3$. Thus, the project-related annual concentration of DPM cannot exceed 5.0 $\mu g/m^3$; resulting in a chronic HI of greater than 1.0 (i.e., DPM annual concentration/5.0 $\mu g/m^3$). The chronic HI would be 0.01 and thus well below the project-level threshold of 1 and the health impact would therefore be less than significant.

Construction $PM_{2.5}$ Concentration at Existing Residences

Dispersion modeling also estimated the exposure of sensitive receptors to project-related concentrations of $PM_{2.5}$. The BAAQMD *Air Quality Guidelines* requires inclusion of $PM_{2.5}$ exhaust and fugitive dust emissions in this analysis. The mitigated annual $PM_{2.5}$ concentration due to construction (combustion exhaust and fugitive dust) would be 0.13 $\mu g/m^3$ for the Malone Road project and 0.01 $\mu g/m^3$ for the Blossom Hill Road project which are below the BAAQMD threshold of 0.3 $\mu g/m^3$ and would be considered less than significant.

[19] Office of Environmental Health Hazards Assessment Chemical Database – Air, http://oehha.ca.gov/chemicals

[20] California Office of Environmental Health Hazards Assessment - Acute, 8-hour, and Chronic Reference Exposure Levels, June 2014, http://www.oehha.ca.gov/air/allrels.html

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-2: 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.
- 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_2), methane (CH_4), and nitrous oxide (N_2O), ozone, and water vapor.

While the presence of the primary GHG in the atmosphere are naturally occurring, CO_2, CH_4, and N_2O are also emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Emissions of CO_2 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_2 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_2. CH_4 and N_2O are substantially more potent GHG than CO_2, with GWP of 25 and 298 times that of CO_2, respectively.[21]

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons (MT) of CO_2 equivalents (CO_2e). CO_2e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWP than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO_2e.

Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions (and thus substantial increases in atmospheric concentrations of CO_2). In pre-industrial times (c. 1860), concentrations of atmospheric CO_2 were approximately 280 parts per million (ppm). By May 2024, atmospheric CO_2 concentrations had increased to 426.9 ppm, 55 percent above pre-industrial concentrations.[22]

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.[23]

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.

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[21] Global Warming Potential values, https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf

[22] Earth System Research Laboratory, *Recent Monthly Mean CO_2 at Mauna Lora*, www.esrl.noaa.gov/gmd/ccgg/trends/

[23] 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

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 sold 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_2e 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_2e and the 2020 business-as-usual forecast as 509 million metric tons of CO_2e. 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_2e and the 2020 business-as-usual forecast as 509 million metric tons of CO_2e. 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.[24] The 2022 Scoping Plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 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.
- 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.

[24] 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

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_2 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_2 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_2 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 nongovernmental 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.

Envision San José 2040 General Plan

The *Envision San José 2040 General Plan* includes the following goals and policies that may be applicable to the project:

Goal MS-10: Air Pollutant Emission Reduction

MS-10.1 Assess projected air emissions from new development in conformance with the BAAQMD *CEQA Air Quality Guidelines* and relative to state and federal standards. Identify and implement feasible air emission reduction measures.

MS-10.8 Minimize vegetation removal required for fire prevention. Require alternatives to discing, such as mowing, to the extent feasible. Where vegetation removal is required for property maintenance purposes, encourage alternatives that limit the exposure of bare soil.

Goal MS-11: Toxic Air Contaminants

MS-11.2 For projects that emit toxic air contaminants, require project proponents to prepare health risk assessments in accordance with BAAQMD-recommended procedures as part of environmental review and employ effective mitigation to reduce possible health risks to a less than significant level. Alternatively, require new projects (such as, but not limited to, industrial, manufacturing, and processing facilities) that are sources of TAC to be located an adequate distance from residential areas and other sensitive receptors.

MS-11.3 Review projects generating significant heavy duty truck traffic to designate truck routes that minimize exposure of sensitive receptors to TACs and particulate matter.

The *Envision San José 2040* General Plan includes a GHG Reduction Strategy that is designed to help sustain its natural resources, grow efficiently, and meet California goals for GHG emissions reduction.[25] Multiple policies and actions in the General Plan have GHG implications, including those targeting land use, housing, transportation, water usage, solid waste generation and recycling, and reuse of historic buildings. The policies also include a monitoring component that allows for adaptation and adjustment of San Jose programs and initiatives related to sustainability and associated reductions in GHG emissions. The GHG Reduction Strategy is intended to meet the mandates as outlined in the CEQA Guidelines and the recent standards for "qualified plans" as set forth by State CEQA Guidelines Section 15183.5(b) (BAAQMD Threshold B).

Climate Smart San José

Climate Smart San José was developed by the city to reduce air pollution, save water, and create a healthier community. The plan contains nine strategies to reduce carbon emissions consistent with the Paris Climate Agreement. These strategies include use of renewable energy, densification of

[25] City of San José General Plan, November 1, 2011, https://www.sanjoseca.gov/your-government/departments-offices/planning-building-code-enforcement/planning-division/citywide-planning/envision-san-jos-2040-general-plan

neighborhoods, electrification and sharing of vehicle fleets, investments in public infrastructure, creating local jobs, and improving building energy-efficiency.[26]

Santa Clara Valley Water Climate Change Action Plan

In 2021, Santa Clara Valley Water published a Climate Change Action Plan (CCAP) is 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.[27]

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_2e per year due to Valley Water's energy portfolio. Ninety-five percent of Valley Water's purchased electricity is sourced from the

[26] Climate Smart San Jose, https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/climate-smart-san-jos

[27] Santa Clara Valley Water Climate Action Plan, July 2021, https://www.valleywater.org/your-water/water-supply-planning/climate-change-action-plan

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.

In 2017, the total GHG emissions associated with Valley Water were 15,300 metric tons of CO_2e. The GHG emissions sequestered or reduced were 19,235 metric tons of CO_2e for a net reduction of 3,935 metric tons of CO_2e.

Greenhouse Gas Regional Emission Estimates

In 2021, the United States emitted about 6,340 million metric tons of CO_2e or 5,586.0 million metric tons of carbon dioxide equivalents after accounting for sequestration from the land sector. Emissions increased in 2021 by 6 percent. The increase in total GHG emissions was driven largely by an increase in CO_2 emissions from fossil fuel combustion. In 2021, CO_2 emissions from fossil fuel combustion increased by 7 percent relative to the previous year. This increase in fossil fuel consumption emissions was due primarily to economic activity rebounding after the height of the COVID-19 pandemic.[28]

According to the USEPA, net emissions in 2021 were 17 percent below 2005 levels. The recent decline is mostly due to a shift to less CO_2-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 29 percent of total GHGs emissions in 2021. Emissions from electric power accounted for the second largest portion (25 percent), while emissions from industry accounted for the third largest portion (24 percent) of total GHG in 2021. [29]

[28] United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2021*, April 2023, https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

[29] United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2021*, April 2023, https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

In 2021, California emitted approximately 381 million metric tons of CO_2e, 12 million metric tons of CO_2e higher than 2020 levels and 50 million metric tons of CO_2e below the 2020 GHG limit of 431 million metric tons of CO_2e).[30] The transportation sector represents 39 percent of the total GHG emissions. The industrial sector represents 22 percent of the total GHG emissions, followed by electricity (16 percent), and residential, agricultural, and commercial (8, 8, and 6 percent, respectively).

In 2021, GHG emissions were 12.6 million metric tons of CO_2e (3.4 percent) higher than 2020 (368.7 million metric tons of CO_2e), but 23.1 million metric tons of CO_2e (5.7 percent) lower than 2019 levels (404.4 million metric tons of CO_2e). Both the 2019 to 2020 decrease and the 2020 to 2021 increase in emissions are likely due in large part to the impacts of the COVID-19 pandemic that were felt globally. Emissions levels in 2020 are anomalous to the long-term trend, and the one-year increase from 2020 to 2021 should be considered in the broader context of the pandemic and subsequent economic recovery that took place over 2021.[31]

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_2e emissions in 2011. Electricity/co-generation sources account for approximately 14 percent of the Bay 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.[32]

The City of San José prepared a GHG inventory for 2017 in its *2030 Greenhouse Gas Reduction Strategy*.[33] The total GHG emissions were estimated to be 5,711,664 metric tons of CO_2e. The transportation and building energy sectors generated the most emissions.

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.

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[30] California Air Resources Board, *Emissions Trends Report 2000-2021 (2023 Edition)*, https://ww2.arb.ca.gov/ghg-inventory-data

[31] California Air Resources Board, *Emissions Trends Report 2000-2021 (2023 Edition)*, https://ww2.arb.ca.gov/ghg-inventory-data

[32] Bay Area Air Quality Management District, *Bay Area Emissions Inventory*, Adopted June 2011.

[33] City of San Jose, *2030 Greenhouse Gas Reduction Strategy, August 2020,* https://www.sanjoseca.gov/your-government/departments-offices/planning-building-code-enforcement/planning-division/environmental-planning/environmental-review/active-eirs/2030-ghgrs-addendum#:~:text=The%20City%20of%20San%20Jos%C3%A9,2030%20to%20meet%20the%20long%2D

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 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)).[34] 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_2e per year for construction activities.[35]

As described, 1,100 metric tons of CO_2e 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_2e per year for

[34] 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."

[35] 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

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_2e 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 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 597 metric tons of CO_2e. As indicated, 30-year amortized annual construction related GHG emissions would be approximately 20 metric tons of CO_2e, , which is below the significance threshold of 1,100 metric tons of CO_2e per year.[36] **Table 9: Estimated Construction Greenhouse Gas Emissions** shows the estimated project GHG emissions.

Table 9: Estimated Construction Greenhouse Gas Emissions (metric tons)

Project	CO2e
Blossom Hill	289
Malone Road	308
Grand Total	**597**
30-Year Amortized	**19.9**
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 **Best Management Practice GHG-1.**

[36] 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

Best Management Practice GHG-1

Consistent with BAAQMD guidance, Valley Water has incorporated the following best management practices to reduce construction related GHG emissions as components of the project:

- Require all diesel-fueled off-road construction equipment be equipped with USEPA Tier 4 Final compliant engines or better as a condition of contract. Where specific equipment is required and an USEPA-rated Tier 4 version is not available, other lower tiered equipment may be used, so long as it can be demonstrated that acquiring the Tier 4 equipment would not be feasible (defined as not being available in the market or resulting in schedule delays that could be detrimental to completion of the project). Alternatively, use CARB – approved renewable diesel fuel in off-road construction equipment and on road trucks.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than two minutes (A five-minute limit is required by the state airborne toxics control measure [Title 13, Sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the project site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure.
- Require all construction equipment to be maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a certified mechanic 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 activity workers and offer meal options onsite or shuttles to nearby meal destinations for construction activity workers.
- Recycle or salvage nonhazardous construction and demolition debris, with a goal of recycling at least 15 percent more by weight than the diversion requirement in Title 24.
- Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water.
- Include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and construction activities.

Consistency with State and Local GHG Reduction Plans

In 2021, Santa Clara Valley Water published a CCAP. 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:

- 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 **Best Management Practice GHG-1**, 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 Climate Smart San José with implementation of **Best Management Practices GHG-1**. 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.

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**). The health impacts would be less than significant with mitigation (**Section 7**). Odor impacts (**Section 8**) and cumulative impacts (**Section 9**) would be less than significant. GHG emissions would also be less than significant (**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

- Blossom Hill
- Malone Road

Valley Water Guadalupe River Bank Stabilization

CalEEMod Version 2022.1 Inputs

Project Characteristics

Start of Construction: June 15, 2025

End of Construction: October 15, 2025

Location: Santa Clara County

Air District: Bay Area Air Quality Management District

Land Use Setting: Suburban

Construction Specifics

Guadalupe u/s Malone maximum excavation depth will be approximately 5 feet for new footing.

Guadalupe d/s Malone maximum excavation depth will be approximately 5 feet for new footing.

Guadalupe at Blossom Hill maximum excavation depth will be approximately 5 feet for new footing.

Guadalupe u/s Malone amount of concrete slab to be removed is approximately 200 feet (L) x 40 feet (W) x 0.5 feet(D), or 4,000 cubic feet, and corresponding footing is approximately 200 feet (L) x 2 feet (W) x 4 feet (D), or 1,600 cubic feet.

Guadalupe d/s Malone amount of concrete slab to be removed is approximately 30 feet (L) x 40 feet (W) x 0.5 feet (D), or 600 cubic feet., and corresponding footing is approximately 30 feet (L) x 2 feet (W) x 4 feet (D), or 240 cubic feet.

Guadalupe at Blossom Hill amount of gabion rock to be removed is approximately 170 feet (L) x 3 feet (W) x 8 feet (D), or 4,080 cubic feet.

Guadalupe River u/s & d/s Malone is anticipated to require approximately 300 trips to remove existing debris and bank material.

Guadalupe River at Blossom Hill is anticipated to require approximately 150 trips to remove existing gabions baskets and haul new rock rip-rap.

This would include mobilization and demobilization of construction equipment, setting up dewatering equipment, transporting fill for temp ramp, removing trees within project footprint, removing concrete slope and footing material, delivering gravel bottom fill material and rock rip-rap, and concrete trucks and pumps.

Stevens Creek Quarry: Blossom Hill Road round-trip distance of 40 miles and Malone Road round-trip distance of 30 miles. Granite Rock is approximately 100 miles round-trip to project sites.

Due to limited staging areas at both sites, contractors may likely only stockpile small quantities of rock on site, which should result in lower trips per day. Anticipate having 10 to 15 trips per day at both sites.

Typically, each site may be staffed with 1 foreman, 4-5 workers, 1 flagger, 1 water trucker/sweeper.

Construction hours are anticipated to be from 7 a.m. to 5 p.m. Monday through Friday.

Guadalupe River u/s Malone area size is approximately 0.25 acres (bank + bed). Length: 230 feet; Width: 50 feet

Guadalupe River d/s Malone area size is approximately 0.12 acres (bank + bed). Length: 90 feet; Width: 60 feet

Guadalupe River at Blossom Hill area size is approximately 0.1 acres (bank + bed). Length: 150 feet; Width: 30 feet

Guadalupe River u/s & d/s Malone will require approximately 250 cubic yards of concrete, and 800 cubic yards of rip-rap.

Guadalupe River at Blossom Hill will require approximately 250 cubic yards of rip-rap.

Estimated Construction Schedule

Description	Phase	Start	End	Working Days
Linear, Grubbing & Land Clearing	Concrete Slope Paving/Gabion Removal	06/15/2025	06/30/2025	10
Linear, Grading & Excavation	Grading and Excavation	07/01/2025	07/21/2025	15
Linear, Drainage, Utilities, & Sub-Grade	Drainage, Utilities, and Subgrade	07/22/2025	09/01/2025	30
Linear, Paving	RSP, Concrete Slope Paving, and Finished Grading	09/02/2025	10/15/2025	30

Estimated Construction Equipment Usage

Description	Phase	Equipment	Amount	Daily Hours	HP
Linear, Grubbing & Land Clearing	Concrete Slope Paving/Gabion Removal	Excavator	2	8	38
Linear, Grubbing & Land Clearing	Concrete Slope Paving/Gabion Removal	Tractors/Loaders/Backhoes	4	8	84
Linear, Grubbing & Land Clearing	Concrete Slope Paving/Gabion Removal	Dump Trucks	10	4	376
Linear, Grubbing & Land Clearing	Concrete Slope Paving/Gabion Removal	Water Truck/Sweeper	1	4	376
Linear, Grubbing & Land Clearing	Concrete Slope Paving/Gabion Removal	Generator	2	24	48
Linear, Grading & Excavation	Grading and Excavation	Excavator	2	8	38
Linear, Grading & Excavation	Grading and Excavation	Tractors/Loaders/Backhoes	4	8	84
Linear, Grading & Excavation	Grading and Excavation	Dump Trucks	10	4	376
Linear, Grading & Excavation	Grading and Excavation	Water Truck/Sweeper	1	4	376
Linear, Grading & Excavation	Grading and Excavation	Generator	2	24	48
Linear, Drainage, Utilities, & Sub-Grade	Drainage, Utilities, and Subgrade	Excavator	2	8	38
Linear, Drainage, Utilities, & Sub-Grade	Drainage, Utilities, and Subgrade	Tractors/Loaders/Backhoes	4	8	84
Linear, Drainage, Utilities, & Sub-Grade	Drainage, Utilities, and Subgrade	Truck-mounted Crane	1	4	367
Linear, Drainage, Utilities, & Sub-Grade	Drainage, Utilities, and Subgrade	Water Truck/Sweeper	1	2	376
Linear, Drainage, Utilities, & Sub-Grade	Drainage, Utilities, and Subgrade	Generator	2	24	48
Linear, Paving	RSP, Concrete Slope Paving, and Finished Grading	Excavator	2	8	38
Linear, Paving	RSP, Concrete Slope Paving, and Finished Grading	Tractors/Loaders/Backhoes	4	8	84
Linear, Paving	RSP, Concrete Slope Paving, and Finished Grading	Compactor	1	4	36
Linear, Paving	RSP, Concrete Slope Paving, and Finished Grading	Truck-mounted Crane	1	4	367
Linear, Paving	RSP, Concrete Slope Paving, and Finished Grading	Concrete Trucks	2	4	376
Linear, Paving	RSP, Concrete Slope Paving, and Finished Grading	Concrete Pumper	1	4	82
Linear, Paving	RSP, Concrete Slope Paving, and Finished Grading	Generator	2	24	48

Note: Additionally, eight construction worker vehicle trips will occur during each construction phase and four pickup trucks will be used 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 Guadalupe River Blossom Hill Project Custom Report

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1.1. Basic Project Information

Data Field	Value
Project Name	Valley Water Guadalupe River Blossom Hill Project
Construction Start Date	6/17/2025
Lead Agency	Santa Clara Valley Water
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	18.2
Location	37.25052360848679, -121.8703052136753
County	Santa Clara
City	San Jose
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1920
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.28

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	0.04	Mile	0.10	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

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

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.64	4.43	38.7	42.1	0.13	1.17	4.92	6.08	1.05	0.70	1.75	—	14,774	14,774	0.78	0.77	9.90	15,035
Mit.	1.61	1.25	21.2	61.7	0.13	0.27	4.92	5.19	0.25	0.70	0.94	—	14,774	14,774	0.78	0.77	9.90	15,035
% Reduced	72%	72%	45%	-46%	—	77%	—	15%	77%	—	46%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.32	2.77	24.6	29.4	0.06	0.78	0.09	0.87	0.72	0.02	0.74	—	5,692	5,692	0.23	0.06	0.01	5,716
Mit.	0.76	0.75	13.9	35.6	0.06	0.11	0.09	0.21	0.11	0.02	0.14	—	5,692	5,692	0.23	0.06	0.01	5,716
% Reduced	77%	73%	43%	-21%	—	85%	—	76%	84%	—	81%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.87	0.71	6.32	7.38	0.02	0.20	0.31	0.51	0.18	0.04	0.22	—	1,728	1,728	0.08	0.05	0.23	1,743
Mit.	0.21	0.19	3.54	9.44	0.02	0.03	0.31	0.34	0.03	0.04	0.07	—	1,728	1,728	0.08	0.05	0.23	1,743
% Reduced	76%	73%	44%	-28%	—	83%	—	32%	83%	—	67%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	0.13	1.15	1.35	< 0.005	0.04	0.06	0.09	0.03	0.01	0.04	—	286	286	0.01	0.01	0.04	289
Mit.	0.04	0.04	0.65	1.72	< 0.005	0.01	0.06	0.06	0.01	0.01	0.01	—	286	286	0.01	0.01	0.04	289
% Reduced	76%	73%	44%	-28%	—	83%	—	32%	83%	—	67%	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	5.64	4.43	38.7	42.1	0.13	1.17	4.92	6.08	1.05	0.70	1.75	—	14,774	14,774	0.78	0.77	9.90	15,035
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.32	2.77	24.6	29.4	0.06	0.78	0.09	0.87	0.72	0.02	0.74	—	5,692	5,692	0.23	0.06	0.01	5,716
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.87	0.71	6.32	7.38	0.02	0.20	0.31	0.51	0.18	0.04	0.22	—	1,728	1,728	0.08	0.05	0.23	1,743
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.16	0.13	1.15	1.35	< 0.005	0.04	0.06	0.09	0.03	0.01	0.04	—	286	286	0.01	0.01	0.04	289

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.61	1.25	21.2	61.7	0.13	0.27	4.92	5.19	0.25	0.70	0.94	—	14,774	14,774	0.78	0.77	9.90	15,035

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.76	0.75	13.9	35.6	0.06	0.11	0.09	0.21	0.11	0.02	0.14	—	5,692	5,692	0.23	0.06	0.01	5,716
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.21	0.19	3.54	9.44	0.02	0.03	0.31	0.34	0.03	0.04	0.07	—	1,728	1,728	0.08	0.05	0.23	1,743
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.04	0.04	0.65	1.72	< 0.005	0.01	0.06	0.06	0.01	0.01	0.01	—	286	286	0.01	0.01	0.04	289

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.17	4.32	33.4	39.3	0.10	1.08	—	1.08	1.00	—	1.00	—	10,327	10,327	0.42	0.08	—	10,363
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.18	0.12	< 0.005	< 0.005	3.71	3.71	< 0.005	0.37	0.37	—	51.5	51.5	0.01	0.01	0.08	54.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.14	0.12	0.92	1.08	< 0.005	0.03	—	0.03	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.49
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.03	0.02	0.17	0.20	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	46.8	46.8	< 0.005	< 0.005	—	47.0
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.25
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.96	2.96	< 0.005	< 0.005	< 0.005	3.09
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.49	0.49	< 0.005	< 0.005	< 0.005	0.51
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Linear, Grubbing & Land Clearing (2025) - 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	1.13	1.13	15.9	58.9	0.10	0.19	—	0.19	0.19	—	0.19	—	10,327	10,327	0.42	0.08	—	10,363
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.18	0.12	< 0.005	< 0.005	3.71	3.71	< 0.005	0.37	0.37	—	51.5	51.5	0.01	0.01	0.08	54.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.44	1.61	< 0.005	0.01	—	0.01	0.01	—	0.01	—	283	283	0.01	< 0.005	—	284
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.49
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.8	46.8	< 0.005	< 0.005	—	47.0
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.25
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.96	2.96	< 0.005	< 0.005	< 0.005	3.09
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.49	0.49	< 0.005	< 0.005	< 0.005	0.51
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Linear, Grading & Excavation (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.17	4.32	33.4	39.3	0.10	1.08	—	1.08	1.00	—	1.00	—	10,327	10,327	0.42	0.08	—	10,363
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.18	0.12	< 0.005	< 0.005	3.71	3.71	< 0.005	0.37	0.37	—	51.5	51.5	0.01	0.01	0.08	54.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.37	1.61	< 0.005	0.04	—	0.04	0.04	—	0.04	—	424	424	0.02	< 0.005	—	426
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	2.12	2.12	< 0.005	< 0.005	< 0.005	2.23
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.03	0.25	0.29	< 0.005	0.01	—	0.01	0.01	—	0.01	—	70.3	70.3	< 0.005	< 0.005	—	70.5
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.37
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.42	0.07	4.97	2.34	0.03	0.08	1.10	1.18	0.05	0.30	0.35	—	4,219	4,219	0.34	0.66	9.27	4,435
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.64	2.64	< 0.005	< 0.005	< 0.005	2.68
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.44	4.44	< 0.005	< 0.005	0.01	4.64
Hauling	0.02	< 0.005	0.21	0.10	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	173	173	0.01	0.03	0.16	182
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.44
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.73	0.73	< 0.005	< 0.005	< 0.005	0.77
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.7	28.7	< 0.005	< 0.005	0.03	30.1

3.4. Linear, Grading & Excavation (2025) - 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	1.13	1.13	15.9	58.9	0.10	0.19	—	0.19	0.19	—	0.19	—	10,327	10,327	0.42	0.08	—	10,363
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.18	0.12	< 0.005	< 0.005	3.71	3.71	< 0.005	0.37	0.37	—	51.5	51.5	0.01	0.01	0.08	54.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.65	2.42	< 0.005	0.01	—	0.01	0.01	—	0.01	—	424	424	0.02	< 0.005	—	426
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	2.12	2.12	< 0.005	< 0.005	< 0.005	2.23
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.12	0.44	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.3	70.3	< 0.005	< 0.005	—	70.5

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.37
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.42	0.07	4.97	2.34	0.03	0.08	1.10	1.18	0.05	0.30	0.35	—	4,219	4,219	0.34	0.66	9.27	4,435
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.64	2.64	< 0.005	< 0.005	< 0.005	2.68
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.44	4.44	< 0.005	< 0.005	0.01	4.64
Hauling	0.02	< 0.005	0.21	0.10	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	173	173	0.01	0.03	0.16	182
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.44
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.73	0.73	< 0.005	< 0.005	< 0.005	0.77
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.7	28.7	< 0.005	< 0.005	0.03	30.1

3.5. Linear, Drainage, Utilities, & Sub-Grade (2025) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.68	2.23	21.3	25.7	0.05	0.66	—	0.66	0.61	—	0.61	—	4,119	4,119	0.17	0.03	—	4,133
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.75	2.11	< 0.005	0.05	—	0.05	0.05	—	0.05	—	339	339	0.01	< 0.005	—	340
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.32	0.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.1	56.1	< 0.005	< 0.005	—	56.2
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.01	< 0.005	0.16	0.07	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	132	132	0.01	0.02	0.29	139
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.28	5.28	< 0.005	< 0.005	0.01	5.35
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.87	8.87	< 0.005	< 0.005	0.01	9.27
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.9	10.9	< 0.005	< 0.005	0.01	11.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.87	0.87	< 0.005	< 0.005	< 0.005	0.89
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.54
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.80	1.80	< 0.005	< 0.005	< 0.005	1.89

3.6. Linear, Drainage, Utilities, & Sub-Grade (2025) - 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	0.54	0.54	12.7	28.2	0.05	0.07	—	0.07	0.07	—	0.07	—	4,119	4,119	0.17	0.03	—	4,133
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.04	2.32	< 0.005	0.01	—	0.01	0.01	—	0.01	—	339	339	0.01	< 0.005	—	340
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.19	0.42	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.1	56.1	< 0.005	< 0.005	—	56.2
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.01	< 0.005	0.16	0.07	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	132	132	0.01	0.02	0.29	139
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.28	5.28	< 0.005	< 0.005	0.01	5.35
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.87	8.87	< 0.005	< 0.005	0.01	9.27
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.9	10.9	< 0.005	< 0.005	0.01	11.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.87	0.87	< 0.005	< 0.005	< 0.005	0.89
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.54
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.80	1.80	< 0.005	< 0.005	< 0.005	1.89

3.7. Linear, Paving (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.29	2.74	24.5	29.0	0.06	0.78	—	0.78	0.71	—	0.71	—	5,520	5,520	0.22	0.04	—	5,539
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.29	2.74	24.5	29.0	0.06	0.78	—	0.78	0.71	—	0.71	—	5,520	5,520	0.22	0.04	—	5,539
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	0.23	2.01	2.39	< 0.005	0.06	—	0.06	0.06	—	0.06	—	454	454	0.02	< 0.005	—	455
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.37	0.44	< 0.005	0.01	—	0.01	0.01	—	0.01	—	75.1	75.1	< 0.005	< 0.005	—	75.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	63.5	63.5	< 0.005	< 0.005	0.01	64.4

Vendor	0.01	< 0.005	0.15	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.01	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.28	5.28	< 0.005	< 0.005	0.01	5.35
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.87	8.87	< 0.005	< 0.005	0.01	9.27
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.87	0.87	< 0.005	< 0.005	< 0.005	0.89
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.54
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Linear, Paving (2025) - 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	0.73	0.72	13.8	35.2	0.06	0.11	—	0.11	0.11	—	0.11	—	5,520	5,520	0.22	0.04	—	5,539
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	0.72	13.8	35.2	0.06	0.11	—	0.11	0.11	—	0.11	—	5,520	5,520	0.22	0.04	—	5,539

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	1.13	2.89	< 0.005	0.01	—	0.01	0.01	—	0.01	—	454	454	0.02	< 0.005	—	455
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.21	0.53	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	75.1	75.1	< 0.005	< 0.005	—	75.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	63.5	63.5	< 0.005	< 0.005	0.01	64.4
Vendor	0.01	< 0.005	0.15	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.01	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.28	5.28	< 0.005	< 0.005	0.01	5.35
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.87	8.87	< 0.005	< 0.005	0.01	9.27

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.87	0.87	< 0.005	< 0.005	< 0.005	0.89
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.54
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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
Linear, Grubbing & Land Clearing	Linear, Grubbing & Land Clearing	6/15/2025	6/28/2025	5.00	10.0	—

Linear, Grading & Excavation	Linear, Grading & Excavation	6/29/2025	7/19/2025	5.00	15.0	—
Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	7/20/2025	8/31/2025	5.00	30.0	—
Linear, Paving	Linear, Paving	9/1/2025	10/12/2025	5.00	30.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Linear, Grubbing & Land Clearing	Off-Highway Trucks	Diesel	Average	10.0	4.00	376	0.38
Linear, Grubbing & Land Clearing	Sweepers/Scrubbers	Diesel	Average	1.00	4.00	36.0	0.46
Linear, Grubbing & Land Clearing	Generator Sets	Diesel	Average	2.00	24.0	48.0	0.74
Linear, Grading & Excavation	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Linear, Grading & Excavation	Off-Highway Trucks	Diesel	Average	10.0	4.00	376	0.38
Linear, Grading & Excavation	Sweepers/Scrubbers	Diesel	Average	1.00	4.00	36.0	0.46
Linear, Grading & Excavation	Generator Sets	Diesel	Average	2.00	24.0	48.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Excavators	Diesel	Average	2.00	8.00	36.0	0.38

Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Cranes	Diesel	Average	1.00	4.00	367	0.29
Linear, Drainage, Utilities, & Sub-Grade	Sweepers/Scrubbers	Diesel	Average	1.00	2.00	36.0	0.46
Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Average	2.00	24.0	48.0	0.74
Linear, Paving	Rollers	Diesel	Average	1.00	4.00	36.0	0.38
Linear, Paving	Cranes	Diesel	Average	1.00	4.00	367	0.29
Linear, Paving	Off-Highway Trucks	Diesel	Average	2.00	4.00	376	0.38
Linear, Paving	Pumps	Diesel	Average	1.00	4.00	11.0	0.74
Linear, Paving	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Linear, Paving	Generator Sets	Diesel	Average	2.00	24.0	48.0	0.74

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grubbing & Land Clearing	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Linear, Grubbing & Land Clearing	Off-Highway Trucks	Diesel	Tier 4 Final	10.0	4.00	376	0.38
Linear, Grubbing & Land Clearing	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	4.00	36.0	0.46
Linear, Grubbing & Land Clearing	Generator Sets	Diesel	Tier 4 Final	2.00	24.0	48.0	0.74
Linear, Grading & Excavation	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38

Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Linear, Grading & Excavation	Off-Highway Trucks	Diesel	Tier 4 Final	10.0	4.00	376	0.38
Linear, Grading & Excavation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	4.00	36.0	0.46
Linear, Grading & Excavation	Generator Sets	Diesel	Tier 4 Final	2.00	24.0	48.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Cranes	Diesel	Tier 4 Final	1.00	4.00	367	0.29
Linear, Drainage, Utilities, & Sub-Grade	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	2.00	36.0	0.46
Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Tier 4 Final	2.00	24.0	48.0	0.74
Linear, Paving	Rollers	Diesel	Tier 4 Final	1.00	4.00	36.0	0.38
Linear, Paving	Cranes	Diesel	Tier 4 Final	1.00	4.00	367	0.29
Linear, Paving	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	4.00	376	0.38
Linear, Paving	Pumps	Diesel	Average	1.00	4.00	11.0	0.74
Linear, Paving	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Linear, Paving	Generator Sets	Diesel	Tier 4 Final	2.00	24.0	48.0	0.74

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	—	—	—	—

Linear, Grubbing & Land Clearing	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	4.00	8.40	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	0.00	35.0	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	10.0	1.00	HHDT
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	4.00	8.40	HHDT,MHDT
Linear, Grading & Excavation	Hauling	34.0	35.0	HHDT
Linear, Grading & Excavation	Onsite truck	10.0	1.00	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	4.00	8.40	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	1.07	35.0	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	0.00	0.00	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Paving	Vendor	4.00	8.40	HHDT,MHDT
Linear, Paving	Hauling	0.00	35.0	HHDT
Linear, Paving	Onsite truck	0.00	0.00	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	—	—	—	—
Linear, Grubbing & Land Clearing	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	4.00	8.40	HHDT,MHDT

Linear, Grubbing & Land Clearing	Hauling	0.00	35.0	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	10.0	1.00	HHDT
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	4.00	8.40	HHDT,MHDT
Linear, Grading & Excavation	Hauling	34.0	35.0	HHDT
Linear, Grading & Excavation	Onsite truck	10.0	1.00	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	4.00	8.40	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	1.07	35.0	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	0.00	0.00	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Paving	Vendor	4.00	8.40	HHDT,MHDT
Linear, Paving	Hauling	0.00	35.0	HHDT
Linear, Paving	Onsite truck	0.00	0.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

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

5.5. Architectural Coatings

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

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)
Linear, Grubbing & Land Clearing	0.00	0.00	0.37	0.00	—
Linear, Grading & Excavation	0.00	4,080	0.37	0.00	—
Linear, Drainage, Utilities, & Sub-Grade	250	0.00	0.37	0.00	—

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Linear	0.10	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	13.5	annual days of extreme heat
Extreme Precipitation	3.90	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

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

6.2. Initial Climate Risk Scores

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

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

6.3. Adjusted Climate Risk Scores

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

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

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	26.7
AQ-PM	15.7
AQ-DPM	69.6

Drinking Water	22.7
Lead Risk Housing	28.2
Pesticides	0.00
Toxic Releases	23.3
Traffic	87.9
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	51.2
Haz Waste Facilities/Generators	73.8
Impaired Water Bodies	43.8
Solid Waste	0.00
Sensitive Population	—
Asthma	31.9
Cardio-vascular	13.8
Low Birth Weights	55.6
Socioeconomic Factor Indicators	—
Education	45.2
Housing	53.1
Linguistic	28.8
Poverty	30.8
Unemployment	21.1

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	64.00615937
Employed	74.81072758

Median HI	58.73219556
Education	—
Bachelor's or higher	60.24637495
High school enrollment	100
Preschool enrollment	31.2074939
Transportation	—
Auto Access	29.34684974
Active commuting	60.69549596
Social	—
2-parent households	50.51969716
Voting	72.09033748
Neighborhood	—
Alcohol availability	33.15796227
Park access	81.35506224
Retail density	95.59861414
Supermarket access	94.25125112
Tree canopy	71.14076736
Housing	—
Homeownership	24.00872578
Housing habitability	37.07173104
Low-inc homeowner severe housing cost burden	52.0082125
Low-inc renter severe housing cost burden	55.49852432
Uncrowded housing	51.23829077
Health Outcomes	—
Insured adults	70.06287694
Arthritis	48.2
Asthma ER Admissions	59.8
High Blood Pressure	51.5

Cancer (excluding skin)	32.7
Asthma	46.1
Coronary Heart Disease	47.4
Chronic Obstructive Pulmonary Disease	53.7
Diagnosed Diabetes	70.5
Life Expectancy at Birth	64.4
Cognitively Disabled	19.2
Physically Disabled	13.7
Heart Attack ER Admissions	68.3
Mental Health Not Good	57.3
Chronic Kidney Disease	45.1
Obesity	64.9
Pedestrian Injuries	55.3
Physical Health Not Good	60.5
Stroke	51.7
Health Risk Behaviors	—
Binge Drinking	57.0
Current Smoker	63.1
No Leisure Time for Physical Activity	59.1
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	26.6
Elderly	48.7
English Speaking	58.8
Foreign-born	63.3
Outdoor Workers	56.9
Climate Change Adaptive Capacity	—

Impervious Surface Cover	33.1
Traffic Density	82.2
Traffic Access	69.2
Other Indices	—
Hardship	36.7
Other Decision Support	—
2016 Voting	63.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	26.0
Healthy Places Index Score for Project Location (b)	63.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Applicant Response to Data Request

Construction: Off-Road Equipment	Applicant Response to Data Request
Construction: Trips and VMT	Applicant Response to Data Request
Construction: Dust From Material Movement	Applicants Response to Data Request

Valley Water Guadalupe River Malone Road Project Custom Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Valley Water Guadalupe River Malone Road Project
Construction Start Date	6/17/2025
Lead Agency	Santa Clara Valley Water
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	18.2
Location	37.29577131774188, -121.88149071714278
County	Santa Clara
City	San Jose
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1836
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.28

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	0.04	Mile	0.37	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

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

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.84	4.47	41.1	43.3	0.14	1.20	5.44	6.64	1.08	0.84	1.92	—	16,746	16,746	0.94	1.09	14.2	17,107
Mit.	1.81	1.28	23.6	62.8	0.14	0.31	5.44	5.75	0.27	0.84	1.11	—	16,746	16,746	0.94	1.09	14.2	17,107
% Reduced	69%	71%	43%	-45%	—	74%	—	13%	75%	—	42%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.32	2.77	24.6	29.4	0.06	0.78	0.09	0.87	0.72	0.02	0.74	—	5,692	5,692	0.23	0.06	0.01	5,716
Mit.	0.76	0.75	13.9	35.6	0.06	0.11	0.09	0.21	0.11	0.02	0.14	—	5,692	5,692	0.23	0.06	0.01	5,716
% Reduced	77%	73%	43%	-21%	—	85%	—	76%	84%	—	81%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.88	0.72	6.46	7.44	0.02	0.20	0.34	0.54	0.18	0.05	0.23	—	1,839	1,839	0.09	0.06	0.34	1,861
Mit.	0.22	0.19	3.68	9.50	0.02	0.03	0.34	0.38	0.03	0.05	0.08	—	1,839	1,839	0.09	0.06	0.34	1,861
% Reduced	75%	73%	43%	-28%	—	83%	—	30%	82%	—	64%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	0.13	1.18	1.36	< 0.005	0.04	0.06	0.10	0.03	0.01	0.04	—	305	305	0.01	0.01	0.06	308
Mit.	0.04	0.04	0.67	1.73	< 0.005	0.01	0.06	0.07	0.01	0.01	0.02	—	305	305	0.01	0.01	0.06	308
% Reduced	75%	73%	43%	-28%	—	83%	—	30%	82%	—	64%	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	5.84	4.47	41.1	43.3	0.14	1.20	5.44	6.64	1.08	0.84	1.92	—	16,746	16,746	0.94	1.09	14.2	17,107
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.32	2.77	24.6	29.4	0.06	0.78	0.09	0.87	0.72	0.02	0.74	—	5,692	5,692	0.23	0.06	0.01	5,716
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.88	0.72	6.46	7.44	0.02	0.20	0.34	0.54	0.18	0.05	0.23	—	1,839	1,839	0.09	0.06	0.34	1,861
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.16	0.13	1.18	1.36	< 0.005	0.04	0.06	0.10	0.03	0.01	0.04	—	305	305	0.01	0.01	0.06	308

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.81	1.28	23.6	62.8	0.14	0.31	5.44	5.75	0.27	0.84	1.11	—	16,746	16,746	0.94	1.09	14.2	17,107

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.76	0.75	13.9	35.6	0.06	0.11	0.09	0.21	0.11	0.02	0.14	—	5,692	5,692	0.23	0.06	0.01	5,716
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.22	0.19	3.68	9.50	0.02	0.03	0.34	0.38	0.03	0.05	0.08	—	1,839	1,839	0.09	0.06	0.34	1,861
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.04	0.04	0.67	1.73	< 0.005	0.01	0.06	0.07	0.01	0.01	0.02	—	305	305	0.01	0.01	0.06	308

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.17	4.32	33.4	39.3	0.10	1.08	—	1.08	1.00	—	1.00	—	10,327	10,327	0.42	0.08	—	10,363
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.18	0.12	< 0.005	< 0.005	3.71	3.71	< 0.005	0.37	0.37	—	51.5	51.5	0.01	0.01	0.08	54.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.14	0.12	0.92	1.08	< 0.005	0.03	—	0.03	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.49
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.03	0.02	0.17	0.20	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	46.8	46.8	< 0.005	< 0.005	—	47.0
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.25
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.96	2.96	< 0.005	< 0.005	< 0.005	3.09
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.49	0.49	< 0.005	< 0.005	< 0.005	0.51
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Linear, Grubbing & Land Clearing (2025) - 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	1.13	1.13	15.9	58.9	0.10	0.19	—	0.19	0.19	—	0.19	—	10,327	10,327	0.42	0.08	—	10,363
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.18	0.12	< 0.005	< 0.005	3.71	3.71	< 0.005	0.37	0.37	—	51.5	51.5	0.01	0.01	0.08	54.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.44	1.61	< 0.005	0.01	—	0.01	0.01	—	0.01	—	283	283	0.01	< 0.005	—	284
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.49
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.8	46.8	< 0.005	< 0.005	—	47.0
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.25
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.96	2.96	< 0.005	< 0.005	< 0.005	3.09
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.49	0.49	< 0.005	< 0.005	< 0.005	0.51
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Linear, Grading & Excavation (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.17	4.32	33.4	39.3	0.10	1.08	—	1.08	1.00	—	1.00	—	10,327	10,327	0.42	0.08	—	10,363
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.18	0.12	< 0.005	< 0.005	3.71	3.71	< 0.005	0.37	0.37	—	51.5	51.5	0.01	0.01	0.08	54.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.37	1.61	< 0.005	0.04	—	0.04	0.04	—	0.04	—	424	424	0.02	< 0.005	—	426
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	2.12	2.12	< 0.005	< 0.005	< 0.005	2.23
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.03	0.25	0.29	< 0.005	0.01	—	0.01	0.01	—	0.01	—	70.3	70.3	< 0.005	< 0.005	—	70.5
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.37
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.62	0.11	7.33	3.47	0.04	0.12	1.62	1.73	0.08	0.44	0.52	—	6,191	6,191	0.50	0.98	13.6	6,507
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.64	2.64	< 0.005	< 0.005	< 0.005	2.68
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.44	4.44	< 0.005	< 0.005	0.01	4.64
Hauling	0.03	< 0.005	0.31	0.14	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	254	254	0.02	0.04	0.24	267
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.44
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.73	0.73	< 0.005	< 0.005	< 0.005	0.77
Hauling	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	42.1	42.1	< 0.005	0.01	0.04	44.2

3.4. Linear, Grading & Excavation (2025) - 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	1.13	1.13	15.9	58.9	0.10	0.19	—	0.19	0.19	—	0.19	—	10,327	10,327	0.42	0.08	—	10,363
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.18	0.12	< 0.005	< 0.005	3.71	3.71	< 0.005	0.37	0.37	—	51.5	51.5	0.01	0.01	0.08	54.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.65	2.42	< 0.005	0.01	—	0.01	0.01	—	0.01	—	424	424	0.02	< 0.005	—	426
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	2.12	2.12	< 0.005	< 0.005	< 0.005	2.23
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.12	0.44	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.3	70.3	< 0.005	< 0.005	—	70.5

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.37
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.62	0.11	7.33	3.47	0.04	0.12	1.62	1.73	0.08	0.44	0.52	—	6,191	6,191	0.50	0.98	13.6	6,507
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.64	2.64	< 0.005	< 0.005	< 0.005	2.68
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.44	4.44	< 0.005	< 0.005	0.01	4.64
Hauling	0.03	< 0.005	0.31	0.14	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	254	254	0.02	0.04	0.24	267
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.44
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.73	0.73	< 0.005	< 0.005	< 0.005	0.77
Hauling	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	42.1	42.1	< 0.005	0.01	0.04	44.2

3.5. Linear, Drainage, Utilities, & Sub-Grade (2025) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.68	2.23	21.3	25.7	0.05	0.66	—	0.66	0.61	—	0.61	—	4,119	4,119	0.17	0.03	—	4,133
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.75	2.11	< 0.005	0.05	—	0.05	0.05	—	0.05	—	339	339	0.01	< 0.005	—	340
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.32	0.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.1	56.1	< 0.005	< 0.005	—	56.2
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.05	0.01	0.60	0.28	< 0.005	0.01	0.13	0.14	0.01	0.04	0.04	—	508	508	0.04	0.08	1.11	534
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.28	5.28	< 0.005	< 0.005	0.01	5.35
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.87	8.87	< 0.005	< 0.005	0.01	9.27
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.7	41.7	< 0.005	0.01	0.04	43.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.87	0.87	< 0.005	< 0.005	< 0.005	0.89
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.54
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.91	6.91	< 0.005	< 0.005	0.01	7.25

3.6. Linear, Drainage, Utilities, & Sub-Grade (2025) - 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	0.54	0.54	12.7	28.2	0.05	0.07	—	0.07	0.07	—	0.07	—	4,119	4,119	0.17	0.03	—	4,133
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.04	2.32	< 0.005	0.01	—	0.01	0.01	—	0.01	—	339	339	0.01	< 0.005	—	340
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.19	0.42	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.1	56.1	< 0.005	< 0.005	—	56.2
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.05	0.01	0.60	0.28	< 0.005	0.01	0.13	0.14	0.01	0.04	0.04	—	508	508	0.04	0.08	1.11	534
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.28	5.28	< 0.005	< 0.005	0.01	5.35
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.87	8.87	< 0.005	< 0.005	0.01	9.27
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.7	41.7	< 0.005	0.01	0.04	43.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.87	0.87	< 0.005	< 0.005	< 0.005	0.89
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.54
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.91	6.91	< 0.005	< 0.005	0.01	7.25

3.7. Linear, Paving (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.29	2.74	24.5	29.0	0.06	0.78	—	0.78	0.71	—	0.71	—	5,520	5,520	0.22	0.04	—	5,539
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.29	2.74	24.5	29.0	0.06	0.78	—	0.78	0.71	—	0.71	—	5,520	5,520	0.22	0.04	—	5,539
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	0.23	2.01	2.39	< 0.005	0.06	—	0.06	0.06	—	0.06	—	454	454	0.02	< 0.005	—	455
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.37	0.44	< 0.005	0.01	—	0.01	0.01	—	0.01	—	75.1	75.1	< 0.005	< 0.005	—	75.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	63.5	63.5	< 0.005	< 0.005	0.01	64.4

Vendor	0.01	< 0.005	0.15	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.01	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.28	5.28	< 0.005	< 0.005	0.01	5.35
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.87	8.87	< 0.005	< 0.005	0.01	9.27
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.87	0.87	< 0.005	< 0.005	< 0.005	0.89
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.54
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Linear, Paving (2025) - 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	0.73	0.72	13.8	35.2	0.06	0.11	—	0.11	0.11	—	0.11	—	5,520	5,520	0.22	0.04	—	5,539
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	0.72	13.8	35.2	0.06	0.11	—	0.11	0.11	—	0.11	—	5,520	5,520	0.22	0.04	—	5,539

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	1.13	2.89	< 0.005	0.01	—	0.01	0.01	—	0.01	—	454	454	0.02	< 0.005	—	455
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.21	0.53	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	75.1	75.1	< 0.005	< 0.005	—	75.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.6	68.6	< 0.005	< 0.005	0.27	69.6
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.29	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	63.5	63.5	< 0.005	< 0.005	0.01	64.4
Vendor	0.01	< 0.005	0.15	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.01	113
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.28	5.28	< 0.005	< 0.005	0.01	5.35
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.87	8.87	< 0.005	< 0.005	0.01	9.27

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.87	0.87	< 0.005	< 0.005	< 0.005	0.89
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.54
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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
Linear, Grubbing & Land Clearing	Linear, Grubbing & Land Clearing	6/17/2025	6/30/2025	5.00	10.0	—

Linear, Grading & Excavation	Linear, Grading & Excavation	7/1/2025	7/21/2025	5.00	15.0	—
Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	7/22/2025	9/1/2025	5.00	30.0	—
Linear, Paving	Linear, Paving	9/2/2025	10/13/2025	5.00	30.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Linear, Grubbing & Land Clearing	Off-Highway Trucks	Diesel	Average	10.0	4.00	376	0.38
Linear, Grubbing & Land Clearing	Sweepers/Scrubbers	Diesel	Average	1.00	4.00	36.0	0.46
Linear, Grubbing & Land Clearing	Generator Sets	Diesel	Average	2.00	24.0	48.0	0.74
Linear, Grading & Excavation	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Linear, Grading & Excavation	Off-Highway Trucks	Diesel	Average	10.0	4.00	376	0.38
Linear, Grading & Excavation	Sweepers/Scrubbers	Diesel	Average	1.00	4.00	36.0	0.46
Linear, Grading & Excavation	Generator Sets	Diesel	Average	2.00	24.0	48.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Excavators	Diesel	Average	2.00	8.00	36.0	0.38

Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Cranes	Diesel	Average	1.00	4.00	367	0.29
Linear, Drainage, Utilities, & Sub-Grade	Sweepers/Scrubbers	Diesel	Average	1.00	2.00	36.0	0.46
Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Average	2.00	24.0	48.0	0.74
Linear, Paving	Rollers	Diesel	Average	1.00	4.00	36.0	0.38
Linear, Paving	Cranes	Diesel	Average	1.00	4.00	367	0.29
Linear, Paving	Off-Highway Trucks	Diesel	Average	2.00	4.00	376	0.38
Linear, Paving	Pumps	Diesel	Average	1.00	4.00	11.0	0.74
Linear, Paving	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Linear, Paving	Generator Sets	Diesel	Average	2.00	24.0	48.0	0.74

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grubbing & Land Clearing	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Linear, Grubbing & Land Clearing	Off-Highway Trucks	Diesel	Tier 4 Final	10.0	4.00	376	0.38
Linear, Grubbing & Land Clearing	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	4.00	36.0	0.46
Linear, Grubbing & Land Clearing	Generator Sets	Diesel	Tier 4 Final	2.00	24.0	48.0	0.74
Linear, Grading & Excavation	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38

Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Linear, Grading & Excavation	Off-Highway Trucks	Diesel	Tier 4 Final	10.0	4.00	376	0.38
Linear, Grading & Excavation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	4.00	36.0	0.46
Linear, Grading & Excavation	Generator Sets	Diesel	Tier 4 Final	2.00	24.0	48.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Cranes	Diesel	Tier 4 Final	1.00	4.00	367	0.29
Linear, Drainage, Utilities, & Sub-Grade	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	2.00	36.0	0.46
Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Tier 4 Final	2.00	24.0	48.0	0.74
Linear, Paving	Rollers	Diesel	Tier 4 Final	1.00	4.00	36.0	0.38
Linear, Paving	Cranes	Diesel	Tier 4 Final	1.00	4.00	367	0.29
Linear, Paving	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	4.00	376	0.38
Linear, Paving	Pumps	Diesel	Average	1.00	4.00	11.0	0.74
Linear, Paving	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Linear, Paving	Generator Sets	Diesel	Tier 4 Final	2.00	24.0	48.0	0.74

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	—	—	—	—

Linear, Grubbing & Land Clearing	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	4.00	8.40	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	0.00	32.5	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	10.0	1.00	HHDT
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	4.00	8.40	HHDT,MHDT
Linear, Grading & Excavation	Hauling	53.7	32.5	HHDT
Linear, Grading & Excavation	Onsite truck	10.0	1.00	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	4.00	8.40	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	4.40	32.5	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	0.00	0.00	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Paving	Vendor	4.00	8.40	HHDT,MHDT
Linear, Paving	Hauling	0.00	32.5	HHDT
Linear, Paving	Onsite truck	0.00	0.00	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	—	—	—	—
Linear, Grubbing & Land Clearing	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	4.00	8.40	HHDT,MHDT

Linear, Grubbing & Land Clearing	Hauling	0.00	32.5	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	10.0	1.00	HHDT
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	4.00	8.40	HHDT,MHDT
Linear, Grading & Excavation	Hauling	53.7	32.5	HHDT
Linear, Grading & Excavation	Onsite truck	10.0	1.00	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	4.00	8.40	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	4.40	32.5	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	0.00	0.00	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	8.00	11.7	LDA,LDT1,LDT2
Linear, Paving	Vendor	4.00	8.40	HHDT,MHDT
Linear, Paving	Hauling	0.00	32.5	HHDT
Linear, Paving	Onsite truck	0.00	0.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

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

5.5. Architectural Coatings

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

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)
Linear, Grubbing & Land Clearing	0.00	0.00	0.37	0.00	—
Linear, Grading & Excavation	0.00	6,440	0.37	0.00	—
Linear, Drainage, Utilities, & Sub-Grade	1,050	0.00	0.37	0.00	—

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Linear	0.37	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	12.3	annual days of extreme heat
Extreme Precipitation	4.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

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

6.2. Initial Climate Risk Scores

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

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

6.3. Adjusted Climate Risk Scores

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

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

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	24.9
AQ-PM	23.8
AQ-DPM	27.8

Drinking Water	22.7
Lead Risk Housing	61.6
Pesticides	0.00
Toxic Releases	29.6
Traffic	26.3
Effect Indicators	—
CleanUp Sites	51.3
Groundwater	45.1
Haz Waste Facilities/Generators	59.9
Impaired Water Bodies	33.2
Solid Waste	9.67
Sensitive Population	—
Asthma	38.9
Cardio-vascular	33.9
Low Birth Weights	53.8
Socioeconomic Factor Indicators	—
Education	24.1
Housing	13.1
Linguistic	11.3
Poverty	4.02
Unemployment	49.9

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	93.50699346
Employed	85.29449506

Median HI	95.7141024
Education	—
Bachelor's or higher	86.52636982
High school enrollment	100
Preschool enrollment	81.47055049
Transportation	—
Auto Access	73.42486847
Active commuting	73.38637239
Social	—
2-parent households	89.88836135
Voting	97.66457077
Neighborhood	—
Alcohol availability	46.56743231
Park access	56.85871936
Retail density	56.61491082
Supermarket access	19.41485949
Tree canopy	87.052483
Housing	—
Homeownership	85.42281535
Housing habitability	89.40074426
Low-inc homeowner severe housing cost burden	88.90029514
Low-inc renter severe housing cost burden	67.71461568
Uncrowded housing	79.21211344
Health Outcomes	—
Insured adults	72.88592326
Arthritis	40.2
Asthma ER Admissions	64.5
High Blood Pressure	50.4

Cancer (excluding skin)	15.0
Asthma	69.3
Coronary Heart Disease	61.0
Chronic Obstructive Pulmonary Disease	79.3
Diagnosed Diabetes	85.5
Life Expectancy at Birth	87.4
Cognitively Disabled	52.2
Physically Disabled	85.5
Heart Attack ER Admissions	76.4
Mental Health Not Good	88.1
Chronic Kidney Disease	64.9
Obesity	72.3
Pedestrian Injuries	45.2
Physical Health Not Good	86.2
Stroke	75.8
Health Risk Behaviors	—
Binge Drinking	38.6
Current Smoker	90.9
No Leisure Time for Physical Activity	92.5
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	11.7
Elderly	31.3
English Speaking	88.2
Foreign-born	19.9
Outdoor Workers	70.1
Climate Change Adaptive Capacity	—

Impervious Surface Cover	68.4
Traffic Density	33.2
Traffic Access	58.0
Other Indices	—
Hardship	9.3
Other Decision Support	—
2016 Voting	98.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	19.0
Healthy Places Index Score for Project Location (b)	95.0
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

Screen	Justification
Construction: Construction Phases	Applicant Response to Data Request

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

Attachment B

Health Risk Assessment Methodology, Assumptions, and Detailed Results

A health risk assessment (HRA) is accomplished in four steps: 1) hazards identification, 2) exposure assessment, 3) toxicity assessment, and 4) risk characterization. These steps cover the estimation of air emissions, the estimation of the air concentrations resulting from a dispersion analysis, the incorporation of the toxicity of the pollutants emitted, and the characterization of the risk based on exposure parameters such as breathing rate, age adjustment factors, and exposure duration; each depending on receptor type (i.e., residence, school, daycare centers, hospitals, senior care facilities, recreational areas, adult, infant, child).

This HRA was conducted in accordance with technical guidelines developed by federal, state, and regional agencies, including U.S. Environmental Protection Agency (USEPA), California Environmental Protection Agency (CalEPA), California Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*[1] and the Bay Area Air Quality Management District (BAAQMD) *Health Risk Screening Analysis Guidelines*.[2] This HRA addresses the emissions from construction activities including onsite equipment and haul trucks. Specific focus is on diesel particulate matter (DPM) and particulate matter equal to or less than 2.5 micrometers (fine particulate or $PM_{2.5}$) emissions. Gasoline-fueled vehicles emit air toxics in much smaller quantities and toxicity levels compared to DPM. Thus, natural gas and gasoline-fueled emission sources were not included in the HRA.

According to CalEPA, a HRA should not be interpreted as the expected rates of cancer or other potential human health effects, but rather as estimates of potential risk or likelihood of adverse effects based on current knowledge, under a number of highly conservative assumptions and the best assessment tools currently available.

TERMS AND DEFINITIONS

As the practice of conducting an HRA is particularly complex and involves concepts that are not altogether familiar to most people, several terms and definitions are provided that are considered essential to the understanding of the approach, methodology and results:

Acute effect – a health effect (non-cancer) produced within a short period of time (few minutes to several days) following exposure to toxic air contaminants (TAC).

Cancer risk – the probability of an individual contracting cancer from a lifetime (i.e., 70 year) exposure to TAC such as DPM in the ambient air.

[1] Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, March 6, 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html.

[2] Bay Area Air Quality Management District, *Health Risk Screening Analysis Guidelines*, January 2010, http://www.baaqmd.gov/~/media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx

Chronic effect – a health effect (non-cancer) produced from a continuous exposure occurring over an extended period (weeks, months, years).

Hazard Index (HI) – the unitless ratio of an exposure level over the acceptable reference dose. The HI can be applied to multiple compounds in an additive manner.

Hazard Quotient (HQ) – the unitless ratio of an exposure level over the acceptable reference dose. The HQ is applied to individual compounds.

Toxic Air Contaminants – any air pollutant that can cause short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). The current California list of TAC lists approximately 200 compounds, including particulate emissions from diesel-fueled engines.

Human Health Effects - comprise disorders such as eye watering, respiratory or heart ailments, and other (i.e., non-cancer) related diseases.

Health Risk Assessment – an analysis designed to predict the generation and dispersion of TAC in the outdoor environment, evaluate the potential for exposure of human populations, and to assess and quantify both the individual and population-wide health risks associated with those levels of exposure.

Incremental – under CEQA, the net difference (or change) in conditions or impacts when comparing the baseline to future year project conditions.

Maximum exposed individual (MEI) – an individual assumed to be located at the point where the highest concentrations of TAC, and therefore, health risks are predicted to occur.

Non-cancer risks – health risks such as eye watering, respiratory or heart ailments, and other non-cancer related diseases.

Receptors – the locations where potential health impacts or risks are predicted (i.e., schools, residences, and recreational sites).

LIMITATIONS AND UNCERTAINTIES

There are several important limitations and uncertainties commonly associated with an HRA due to the wide variability of human exposures to TAC, the extended timeframes over which the exposures are evaluated, and the inability to verify the results. Limitations and uncertainties associated with the HRA and identified by the CalEPA include: (a.) lack of reliable monitoring data; (b.) extrapolation of toxicity data in animals to humans; (c.) estimation errors in calculating TAC emissions; (d.) concentration prediction errors with dispersion models; and (e.) the variability in lifestyles, fitness and other confounding factors of the human population. This HRA was performed using the best available data and methodologies, notwithstanding the following uncertainties:

- There are uncertainties associated with the estimation of emissions from project activities. Where project-specific data, such as emission factors, are not available, default assumptions in emission models were used.

- The limitations of the air dispersion model provide a source of uncertainty in the estimation of exposure concentrations. According to USEPA, errors due to the limitation of the algorithms implemented in the air dispersion model in the highest estimated concentrations of +/- 10 percent to 40 percent are typical.[3]

- The source parameters used to model emission sources add uncertainty. For all emission sources, the source parameters used source-specific, recommended as defaults, or expected to produce more conservative results. Discrepancies might exist in actual emissions characteristics of an emission source and its representation in the dispersion model.

- The exposure duration estimates do not consider that people do not usually reside at the same location for 30 years and that other exposures (i.e., school children) are also of much shorter durations than was assumed in this HRA. This exposure duration is a highly conservative assumption, since most people do not remain at home all day and on average residents change residences every 11 to 12 years. In addition, this assumption adopts that residents are experiencing outdoor concentrations for the entire exposure period.

- For the risk and hazards calculations as well as the cumulative health impact, numerous assumptions must be made in order to estimate human exposure to pollutants. These assumptions include parameters such as breathing rates, exposure time and frequency, exposure duration, and human activity patterns. While a mean value derived from scientifically defensible studies is the best estimate of central tendency, most of the exposure variables used in this HRA are high-end estimates. The combination of several high-end estimates used as exposure parameters may substantially overestimate pollutant intake. The excess lifetime cancer risks calculated in this HRA are therefore likely to be higher than may be required to be protective of public health.

- The Cal/EPA cancer potency factor for DPM was used to estimate cancer risks associated with exposure to DPM emissions from construction activities. However, the cancer potency factor derived by Cal/EPA for DPM is highly uncertain in both the estimation of response and dose. In the past, due to inadequate animal test data and epidemiology data on diesel exhaust, the International Agency for Research on Cancer (IARC), a branch of the World Health Organization, had classified DPM as Probably Carcinogenic to Humans (Group 2); the USEPA had also concluded that the existing data did not provide an adequate basis for quantitative risk assessment.[4] However, based on two recent scientific studies,[5] IARC recently re-classified DPM

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[3] US Environmental Protection Agency, *Guideline on Air Quality Models (Revised), 40 Code of Federal Regulations, Part 51, Appendix W,* November 2005, https://www3.epa.gov/scram001/guidance/guide/appw_05.pdf

[4] US Environmental Protection Agency, *Health Assessment Document for Diesel Engine Exhaust*, May 2002, https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=29060

[5] Attfield MD, Schleiff PL, Lubin JH, Blair A, Stewart PA, Vermeulen R, Coble JB, Silverman DT, *The Diesel Exhaust in Miners Study: A Nested Case-Control Study of Lung Cancer and Diesel Exhaust*, June 2012, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3369553/

as Carcinogenic to Humans to Group 1,[6] which means that the agency has determined that there is "sufficient evidence of carcinogenicity" of a substance in humans and represents the strongest weight-of-evidence rating in IARC's carcinogen classification scheme. This determination by the IARC may provide additional impetus for the USEPA to identify a quantitative dose-response relationship between exposure to DPM and cancer.

In summary, the estimated health impacts are based primarily on a series of conservative assumptions related to predicted environmental concentrations, exposure, and chemical toxicity. The use of conservative assumptions tends to produce upper-bound estimates of risk. BAAQMD acknowledges this uncertainty by stating: "the methods used [to estimate risk] are conservative, meaning that the real risks from the source may be lower than the calculations, but it is unlikely that they will be higher." The USEPA notes that the conservative assumptions used in a HRA are intended to assure that the estimated risks do not underestimate the actual risks posed by a site and that the estimated risks do not necessarily represent actual risks experienced by populations at or near a site.[7]

HAZARDS IDENTIFICATION

California Air Resources Board (CARB) has developed a list of TAC, where a TAC is "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health (California Health and Safety Code Section 39655). All USEPA hazardous air pollutants are TAC. CARB administers the Air Toxics "Hot Spots" program under Assembly Bill 2588 "Hot Spots" Information and Assessment Act, which requires periodic local review of facilities which emit TAC. Local air agencies periodically must prioritize stationary sources of TAC and prepare health risk assessments for high-priority sources.

Diesel exhaust is a complex mixture of numerous individual gaseous and particulate compounds emitted from diesel-fueled combustion engines. Diesel particulate matter is formed primarily through the incomplete combustion of diesel fuel. DPM is removed from the atmosphere through physical processes including atmospheric fall-out and washout by rain. Humans can be exposed to airborne DPM by deposition on water, soil, and vegetation; although the main pathway of exposure is inhalation. Cal/EPA has concluded that potential cancer risk from inhalation exposure to whole diesel exhaust outweigh the multi-pathway cancer risk from the speciated components.

In August 1998, the CARB identified DPM as an air toxic. CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel- Fueled Engines and Vehicles* and *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines* and approved these documents on September 28, 2000.[8] [9] The documents represent proposals to reduce DPM emissions, with the goal of

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[6] International Agency for Research on Cancer, *Diesel Engine Exhaust Carcinogenic*, June 2012, https://www.iarc.fr/en/media-centre/pr/2012/pdfs/pr213_E.pdf

[7] US Environmental Protection Agency, *Risk Assessment Guidance for Superfund Human Health Risk Assessment*, December 1989, https://www.epa.gov/sites/production/files/2015-09/documents/rags_a.pdf

[8] California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000, http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf

[9] California Air Resources Board, *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines*, October 2000, https://www.arb.ca.gov/diesel/documents/rmgFinal.pdf

reducing emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020. The program aimed to require the use of state-of-the-art catalyzed DPM filters and ultra-low-sulfur diesel fuel.

In 2001, CARB assessed the state-wide health risks from exposure to diesel exhaust and to other toxic air contaminants. It is difficult to distinguish the health risks of diesel emissions from those of other air toxics, since diesel exhaust contains approximately 40 different TAC. The CARB study detected diesel exhaust by using ambient air carbon soot measurements as a surrogate for diesel emissions. The study reported that the state-wide cancer risk from exposure to diesel exhaust was about 540 per million population as compared to a total risk for exposure to all ambient air toxics of 760 per million. This estimate, which accounts for about 70 percent of the total risk from TAC, included both urban and rural areas in the state. The estimate can also be considered an average worst-case for the state, since it assumes constant exposure to outdoor concentrations of diesel exhaust and does not account for expected lower concentrations indoors, where most of time is spent. DPM is estimated to increase statewide cancer risk by 520 cancers per million residents exposed over a lifetime.[10]

Exposure to DPM results in a greater incidence of chronic non-cancer health effects, such as cough, labored breathing, chest tightness, wheezing, and bronchitis. Individuals particularly vulnerable to DPM are children, whose lung tissue is still developing, the elderly and people with illnesses who may have other serious health problems that can be aggravated by exposure to DPM. In general, children are more vulnerable than adults to air pollutants because they have higher inhalation rates, narrower airways, and less mature immune systems. In addition, children with allergies may have an enhanced allergic response when exposed to diesel exhaust.

EXPOSURE ASSESSMENT

Dispersion is the process by which atmospheric pollutants disseminate due to wind and vertical stability. The results of a dispersion analysis are used to assess pollutant concentrations at or near an emission source. The results of an analysis allow predicted concentrations of pollutants to be compared directly to air quality standards and other criteria such as health risks based on modeled concentrations.

A rising pollutant plume reacts with the environment in several ways before it levels off. First, the plume's own turbulence interacts with atmospheric turbulence to entrain ambient air. This mixing process reduces and eventually eliminates the density and momentum differences that cause the plume to rise. Second, wind transports the plume during its rise and entrainment process. Higher winds mix the plume more rapidly, resulting in a lower final rise. Third, the plume interacts with the vertical temperature stratification of the atmosphere, rising as a result of buoyancy in the unstable-to-neutrally stratified mixed layer. However, after the plume encounters the mixing lid and the stably stratified air above, its vertical motion is dampened.

Molecules of gas or small particles injected into the atmosphere will separate from each other as they are acted on by turbulent eddies. The Gaussian mathematical model such as AERMOD simulates the

[10] California Air Resources Board, *Summary: Diesel Particulate Matter Health Impacts*, April 12, 2016, https://www.arb.ca.gov/research/diesel/diesel-health_summ.htm

dispersion of the gas or particles within the atmosphere. The formulation of the Gaussian model is based on the following assumptions:

- The predictions are not time-dependent (all conditions remain unchanged with time)
- The wind speed and direction are uniform, both horizontally and vertically, throughout the region of concern
- The rate of diffusion is not a function of position
- Diffusion in the direction of the transporting wind is negligible when compared to the transport flow

Dispersion Modeling Approach

Air dispersion modeling was performed to estimate the downwind dispersion of DPM exhaust emissions resulting from construction activities. The following sections present the fundamental components of an air dispersion modeling analysis including air dispersion model selection and options, receptor locations, meteorological data, and source exhaust parameters.

Model Selection and Options

AERMOD (Version 23132)[11] was used for the dispersion analysis. AERMOD is the USEPA preferred atmospheric dispersion modeling system for general industrial sources. The model can simulate point, area, volume, and line sources. AERMOD is the appropriate model for this analysis based on the coverage of simple, intermediate, and complex terrain. It also predicts both short-term and long-term (annual) average concentrations. The model was executed using the regulatory default options (stack-tip downwash, buoyancy-induced dispersion, and final plume rise), default wind speed profile categories, default potential temperature gradients, and assuming no pollutant decay.

The selection of the appropriate dispersion coefficients depends on the land use within three kilometers (km) of the project site. The types of land use were based on the classification method defined by Auer (1978); using pertinent United States Geological Survey (USGS) 1:24,000 scale (7.5 minute) topographic maps of the area. If the Auer land use types of heavy industrial, light-to-moderate industrial, commercial, and compact residential account for 50 percent or more of the total area, the USEPA *Guideline on Air Quality Models*[12] recommends using urban dispersion coefficients; otherwise, the appropriate rural coefficients can be used. Based on observation of the area surrounding the project site, rural (urban is only designated within dense city centers such as downtown San Francisco) dispersion coefficients were applied within AERMOD.

Receptor Locations

Some receptors are considered more sensitive to air pollutants than others, because of preexisting health problems, proximity to the emissions source, or duration of exposure to air pollutants. Land uses

[11] US Environmental Protection Agency, AERMOD Modeling System, https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models

[12] US Environmental Protection Agency, *Guideline on Air Quality Models (Revised), 40 Code of Federal Regulations, Part 51, Appendix W,* November 2005, https://www3.epa.gov/scram001/guidance/guide/appw_05.pdf

such as primary and secondary schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential areas are also considered sensitive to poor air quality because people in residential areas are often at home for extended periods. Recreational land users are moderately sensitive to air pollution because vigorous exercise associated with recreation places having a high demand on respiratory system function.

BAAQMD considers the relevant zone of influence for an assessment of air quality health risks to be within 1,000 feet of a project site. Adjacent residential neighborhoods and urban development surround both project sites. The nearest residences to the Malone Road project site are approximately 50 feet surrounding the site along Malone Road and Almaden Road (from the upstream Cofferdam with Sump Pump). The nearest residences to the Blossom Hill Road project site are approximately 450 feet northeast along Blossom River Drive (from the temporary cofferdam). The Avana Almaden Apartments are also located 760 feet to the northwest of the project site.

Figure B-1 displays the sensitive receptors within 1,000 feet of the project site for Blossom Hill. **Figure B-2** displays the sensitive receptors within 1,000 feet of the project site for Malone Road. No schools, assisted living facilities, and day cares are located within 1,000 feet of the project sites. Receptors were placed at a height of 1.8 meters (typical breathing height). Terrain elevations for receptor locations were used based on available USGS information for the area.

Meteorological Data

Hourly meteorological data from San Jose International Airport (surface data), located approximately 5.7 miles to the west-southwest of the proposed project, and Oakland International Airport (upper air) were used in the dispersion modeling analysis. **Figure B-3** displays the annual wind rose. Wind directions are predominantly from the northwest and southeast with a low frequency of calm wind speed conditions (1.2 percent), as shown in **Figure B-4**. The average annual wind speed is 7.1 miles per hour (3.2 meters per second).

Figure B-1
Health Risk Assessment Sensitive Receptors – Blossom Hill

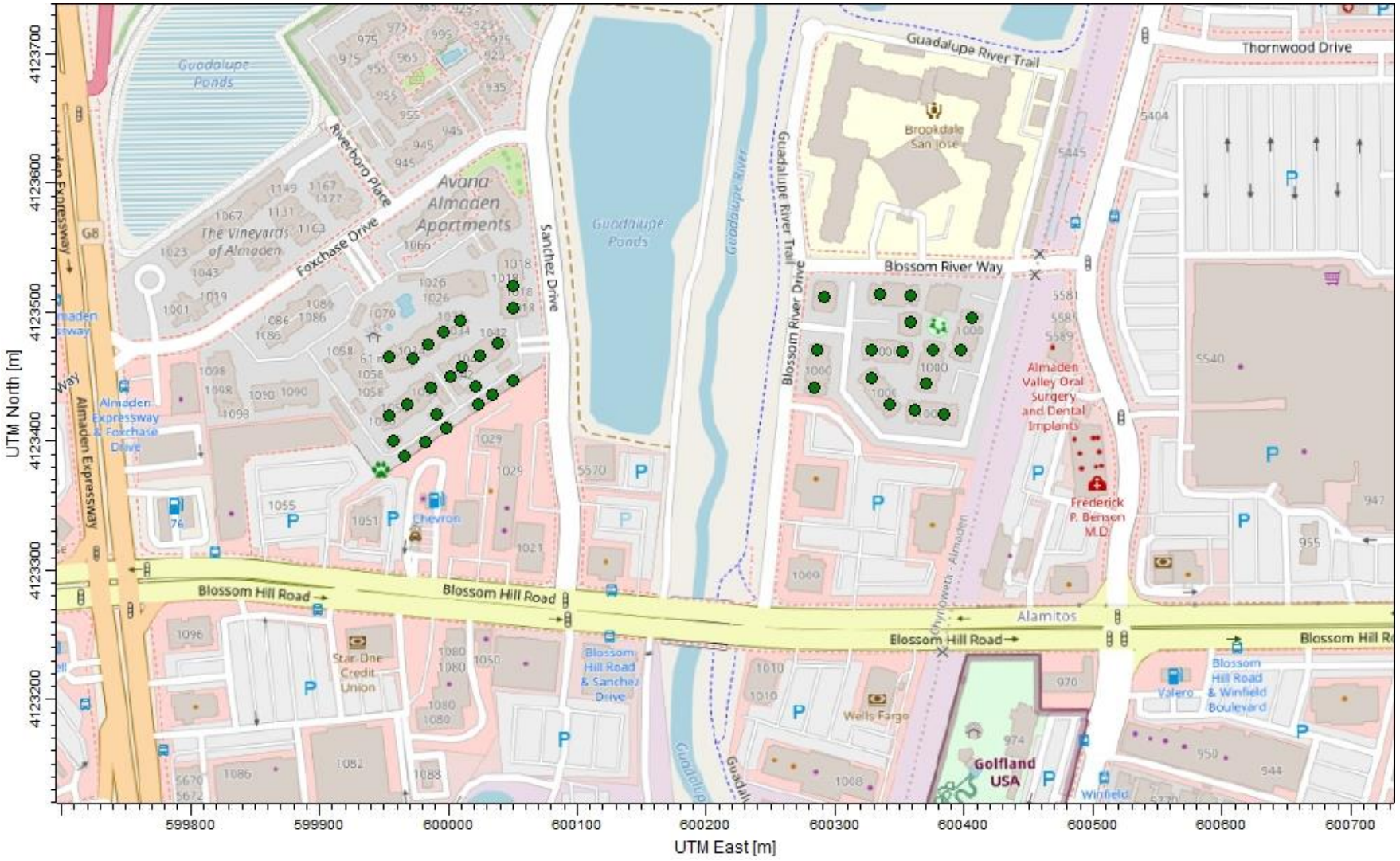


Figure B-2
Health Risk Assessment Sensitive Receptors – Malone Road



Figure B-3
Windrose for San Jose International Airport

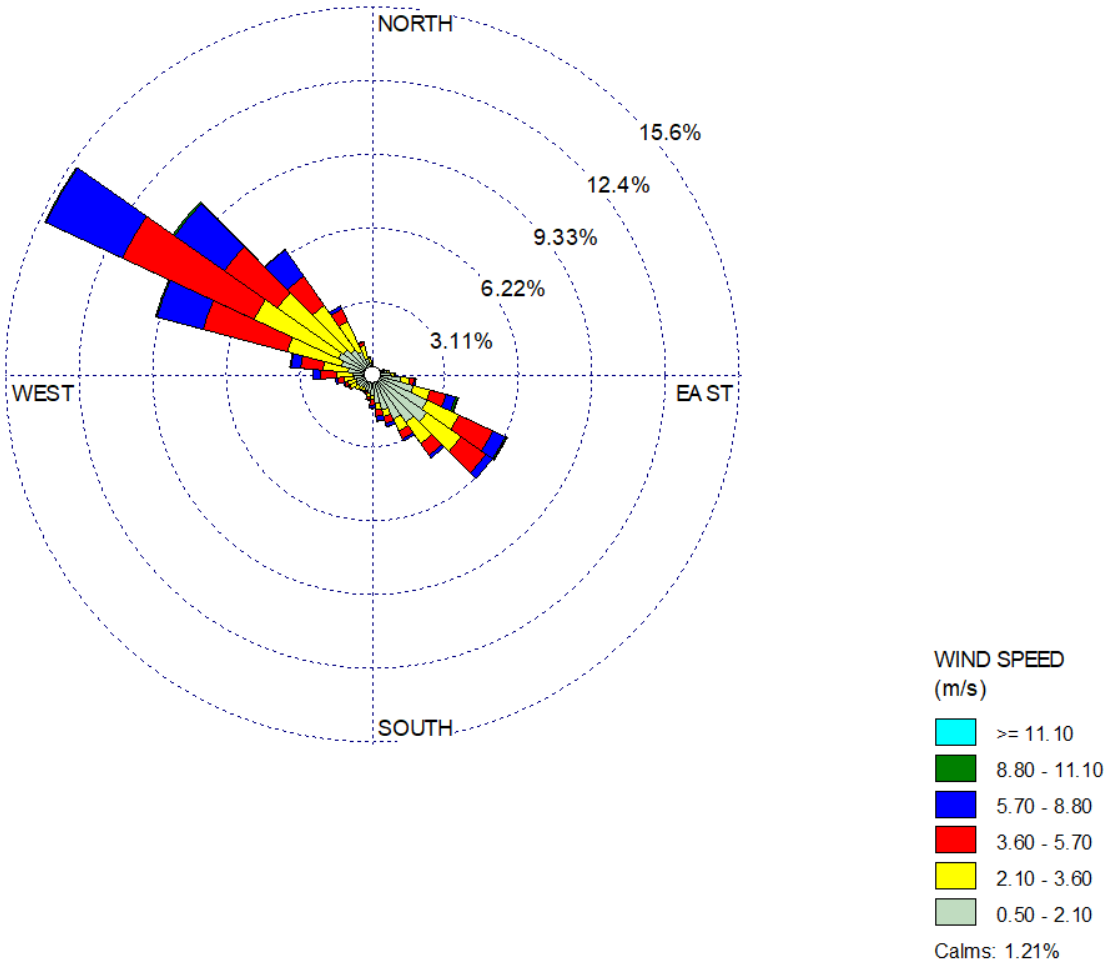
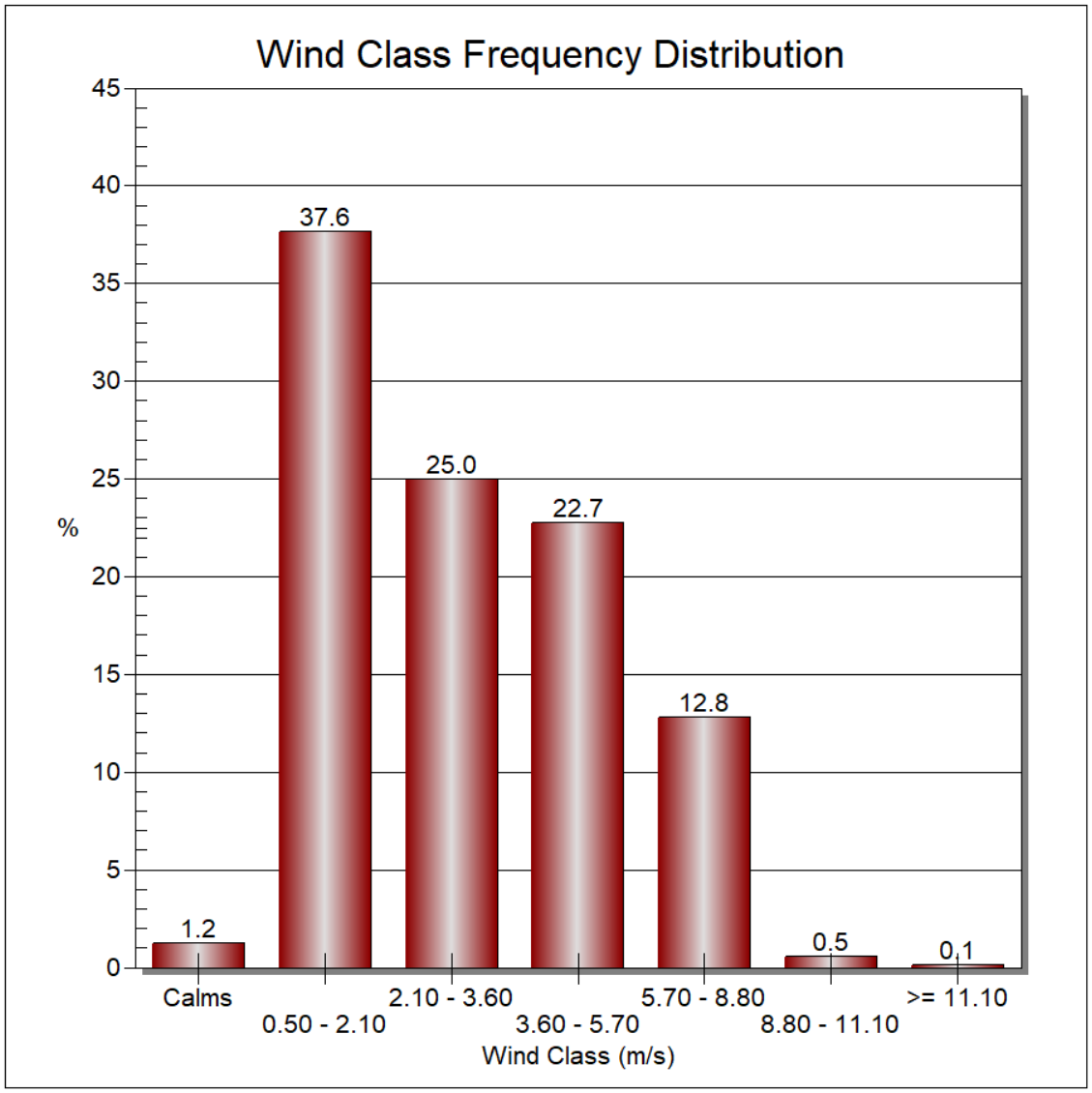


Figure B-4
Wind Speed Distribution for San Jose International Airport



Source Release Characteristics

Construction equipment activities were treated as an area source. The release height of the off-road equipment exhaust was 5.0 meters (16.4 feet) and an initial vertical dimension of 1.4 meters (4.6 feet), which reflects the height of the equipment plus an additional height of the exhaust plume above the exhaust point to account for plume rise due to buoyancy and momentum. Fugitive dust-generating activities were treated as an area source. The release height of the fugitive dust was 0.0 meters (0.0 feet) and an initial vertical dimension of 1.0 meter (3.3 feet). Haul trucks were treated as a line source (i.e., volume sources placed at regular intervals) located along an access road. The haul trucks were assigned a release height of 5.0 meters (16.4 feet) and an initial vertical dimension of 1.4 meters (4.6 feet), which accounts for dispersion from the movement of vehicles.[13] [14] Construction activities would be conducted from 7 a.m. to 5 p.m. Monday through Friday. Terrain elevations for emission source locations were used based on available USGS information for the area. AERMAP (Version 18081)[15] was used to develop the terrain elevations.

EXPOSURE PARAMETERS

This HRA was conducted following methodologies in OEHHA's *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.[16] This was accomplished by applying the estimated concentrations at the receptors analyzed to the established cancer risk estimates and acceptable reference concentrations for non-cancer health effects.

OEHHA's revisions to its *Guidance Manual* were primarily designed to ensure that the greater sensitivity of children to cancer and other health risks is reflected in HRAs. For example, OEHHA now recommends that risks be analyzed separately for multiple age groups, focusing especially on young children and teenagers, rather than the past practice of analyzing risks to the general population, without distinction by age. OEHHA also now recommends that statistical "age sensitivity factors" be incorporated into an HRA, and that children's relatively high breathing rates be accounted for. On the other hand, the *Guidance Manual* revisions also include some changes that would reduce calculated health risks. For example, under the former guidance, OEHHA recommended that residential cancer risks be assessed by assuming 70 years of exposure at a residential receptor; under the *Guidance Manual*, this assumption is lessened to 30 years.

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[13] While haul truck emissions contribute substantially to overall project emissions, they are spread over many miles. Hence, the portion of trucking emissions that would impact one receptor is much smaller than the emissions that the clustered off-road activity at the project site would impact a receptor near the site. For example, the DPM emissions from truck travel within 1,000 feet of the project are less than one percent of the total off-road DPM emissions.

[14] South Coast Air Quality Management District, Final Localized Significance Threshold Methodology. July 2008, http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2

[15] US Environmental Protection Agency, AERMAP, https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models

[16] Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, March 6, 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html

OEHHA has developed exposure factors (e.g., daily breathing rates) for six age groups including the last trimester to birth, birth to 2 years, 2 to 9 years, 2 to 16 years, 16 to 30 years, and 16 to 70 years. These age bins allow for more refined exposure information to be used when estimating exposure and the potential for developing cancer over a lifetime. This means that exposure variates are needed for the third trimester, ages zero to less than two, ages two to less than nine, ages two to less than 16, ages 16 to less than 30, and ages 16 to 70. Residential receptors utilize the 95th percentile breathing rate values. The breathing rates are age-specific and are 1,090 liters per kilogram-day for ages less than 2 years, 745 liters per kilogram-day for ages 2 to 16 years, 335 liters per kilogram-day for ages 16 to 30 years, and 290 liters per kilogram-day for ages 30 to 70 years. A school child breathing rate is 520 liters per kilogram-day and an off-site worker breathing rate is 230 liters per kilogram-day.

OEHHA developed age sensitivity factors (ASF) to consider the increased sensitivity to carcinogens during early-in-life exposures. OEHHA recommends that cancer risks be weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to 2 years of age, and by a factor of 3 for exposures from 2 years through 15 years of age.

Based on OEHHA recommendations, the cancer risk to residential receptors assumes exposure occurs 24 hours per day for 350 days per year while accounting for a percentage of time at home. OEHHA evaluated information from activity pattern databases to estimate the fraction of time at home (FAH) during the day. This information was used to adjust exposure duration and cancer risk based on the assumption that a person is not present at home continuously for 24 hours and therefore exposure to emissions is not occurring when a person is away from their home. In general, the FAH factors are age-specific and are 0.85 for ages less than 2 years, 0.72 for ages 2 to 16 years, and 0.73 for ages 30 to 70 years.

OEHHA has decreased the exposure duration currently being used for estimating cancer risk at the maximum exposed individual resident from 70 years to 30 years. This is based on studies showing that 30 years is a reasonable estimate of the 90th to 95th percentile of residency duration in the population. Additionally, OEHHA recommends using the 9 and 70-year exposure duration to represent the potential impacts over the range of residency periods.

Given the exposure durations of less than 24 hours, sensitive recreational receptors were evaluated for acute impacts only. Based on OEHHA recommendations, for children at school sites, exposure is assumed to occur 10 hours per day for 180 days (or 36 weeks) per year. Cancer risk estimates for children at school sites are calculated based on 9-year exposure duration. School sites also include teachers and other adult staff who are treated as off-site workers.

RISK CHARACTERIZATION

Cancer risk is defined as the lifetime probability of developing cancer from exposure to carcinogenic substances. Cancer risks are expressed as the chance in one million of getting cancer (i.e., number of cancer cases among one million people exposed). The cancer risks are assumed to occur exclusively through the inhalation pathway. The cancer risk can be estimated by using the cancer potency factor (milligrams per kilogram of body weight per day [mg/kg-day]), the 30-year annual average concentration (microgram per cubic meter [$\mu g/m^3$]), and the lifetime exposure adjustment.

Following guidelines established by OEHHA, the incremental cancer risks attributable to the proposed project were calculated by applying exposure parameters to modeled DPM concentrations in order to determine the inhalation dose (mg/kg-day) or the amount of pollutants inhaled per body weight mass per day. The cancer risks occur exclusively through the inhalation pathway; therefore, the cancer risks can be estimated from the following equation:

$$\text{Dose-inh} = \frac{C_{air} * \{DBR\} * A * ASF * FAH * EF * ED * 10^{-6}}{AT}$$

where:

Dose-inh	= Dose of the toxic substance through inhalation in mg/kg-day
10^{-6}	= Micrograms to milligrams conversion, Liters to cubic meters conversion
C_{air}	= Concentration in air in microgram (µg)/cubic meter (m^3)
{DBR}	= Daily breathing rate in liter (L)/kg body weight – day
A	= Inhalation absorption factor, 1.0
ASF	= Age Sensitivity Factor
EF	= Exposure frequency (days/year)
ED	= Exposure duration (years)
FAH	= Fraction of Time at Home
AT	= Averaging time period over which exposure is averaged in days (25,550 days for a 70-year cancer risk)

To determine incremental cancer risk, the estimated inhalation dose attributed to the proposed project was multiplied by the cancer potency slope factor (cancer risk per mg/kg-day). The cancer potency slope factor is the upper bound on the increased cancer risk from a lifetime exposure to a pollutant. These slope factors are based on epidemiological studies and are different values for different pollutants. This allows the estimated inhalation dose to be equated to a cancer risk.

Non-cancer adverse health impacts, acute (short-term) and chronic (long-term), are measured against a hazard index (HI), which is defined as the ratio of the predicted incremental exposure concentration from the proposed project to a published reference exposure level (REL) that could cause adverse health effects as established by OEHHA. The ratio (referred to as the Hazard Quotient [HQ]) of each non-carcinogenic substance that affects a certain organ system is added to produce an overall HI for that organ system. The overall HI is calculated as the total for each organ system. If the overall HI for the highest-impacted organ system is greater than one, then the impact is significant.

The HI is an expression used for the potential for non-cancer health effects. The relationship for the non-cancer health effects is given by the annual concentration (in µg/m^3) and the REL (in µg/m^3). The acute hazard index was determined using the "simple" concurrent maximum approach, which tends to be conservative (i.e., overpredicts).

The relationship for the non-cancer health effects is given by the following equation:

$$HI = C/REL$$

where:

HI = Hazard index; an expression of the potential for non-cancer health effects.

C = Annual average concentration ($\mu g/m^3$) during the 70-year exposure period.

REL = Concentration at which no adverse health effects are anticipated.

The chronic REL for DPM was established by the California OEHHA as 5 $\mu g/m^3$.[17] There is no acute REL for DPM.

[17] Office of Environmental Health Hazards Assessment - Acute, 8-hour, and Chronic Reference Exposure Levels, October 11, 2023, http://www.oehha.ca.gov/air/allrels.html

Attachment B

Health Risk Assessment Results

- Blossom Hill
- Malone Road

AERMOD Summary

- Blossom Hill
- Malone Road

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1,090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	30<70 Years
0.85	fraction of t	0<2 Years
0.72	fraction of t	2<16 Years
0.73	fraction of t	16<70 Years

Project: Valley Water Guadalupe River Bank Stabilization - Blossom Hill
Date: 9/19/2024
Condition: Unmitigated Construction
Receptor: Existing Residence

Exposure Year	Calender Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2025	4.55E-03	5.63E-03	1,090	10.0	0.85	0.64
2	2026			1,090	10.0	0.85	
3	2027			745	4.75	0.72	
4	2028			745	3.00	0.72	
5	2029			745	3.00	0.72	
6	2030			745	3.00	0.72	
7	2031			745	3.00	0.72	
8	2032			745	3.00	0.72	
9	2033			745	3.00	0.72	
10	2034			745	3.00	0.72	
11	2035			745	3.00	0.72	
12	2036			745	3.00	0.72	
13	2037			745	3.00	0.72	
14	2038			745	3.00	0.72	
15	2039			745	3.00	0.72	
16	2040			745	3.00	0.72	
17	2041			335	1.70	0.73	
18	2042			335	1.00	0.73	
19	2043			335	1.00	0.73	
20	2044			335	1.00	0.73	
21	2045			335	1.00	0.73	
22	2046			335	1.00	0.73	
23	2047			335	1.00	0.73	
24	2048			335	1.00	0.73	
25	2049			335	1.00	0.73	
26	2050			335	1.00	0.73	
27	2051			335	1.00	0.73	
28	2052			335	1.00	0.73	
29	2053			335	1.00	0.73	
30	2054			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.64	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.03	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
350	days per year
25,550	days per lifetime
1,090	95th Percentile Daily Breathing Rates (L/kg-day)
861	95th Percentile Daily Breathing Rates (L/kg-day)
745	95th Percentile Daily Breathing Rates (L/kg-day)
335	95th Percentile Daily Breathing Rates (L/kg-day)
290	95th Percentile Daily Breathing Rates (L/kg-day)
0.85	fraction of t 0<2 Years
0.72	fraction of t 2<16 Years
0.73	fraction of t 16<70 Years

Exposure Year	Calender Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)
1	2025	7.89E-04	1.87E-03
2	2026		
3	2027		
4	2028		
5	2029		
6	2030		
7	2031		
8	2032		
9	2033		
10	2034		
11	2035		
12	2036		
13	2037		
14	2038		
15	2039		
16	2040		
17	2041		
18	2042		
19	2043		
20	2044		
21	2045		
22	2046		
23	2047		
24	2048		
25	2049		
26	2050		
27	2051		
28	2052		

29	2053
30	2054

0<2 Years
2<9 Years
2<16 Years
16<30 Years
30<70 Years

Project: Valley Water Guadalupe River Bank Stabilization -
Date: 9/19/2024
Condition: Mitigated Construction
Receptor: Existing Residence

Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1,090	10.0	0.85	0.11
1,090	10.0	0.85	
745	4.75	0.72	
745	3.00	0.72	
745	3.00	0.72	
745	3.00	0.72	
745	3.00	0.72	
745	3.00	0.72	
745	3.00	0.72	
745	3.00	0.72	
745	3.00	0.72	
745	3.00	0.72	
745	3.00	0.72	
745	3.00	0.72	
745	3.00	0.72	
745	3.00	0.72	
335	1.70	0.73	
335	1.00	0.73	
335	1.00	0.73	
335	1.00	0.73	
335	1.00	0.73	
335	1.00	0.73	
335	1.00	0.73	
335	1.00	0.73	
335	1.00	0.73	
335	1.00	0.73	
335	1.00	0.73	
335	1.00	0.73	

0.00	Maximum Annual PM
0.3	Significance Thresho
No	Significant?
0.00	Chronic Hazard Impa
1	Significance Thresho
No	Significant?
0.11	Cancer Risk (Child)
10	Significance Thresho
No	Significant?
0.00	Cancer Risk (Adult)
10	Significance Thresho
No	Significant?

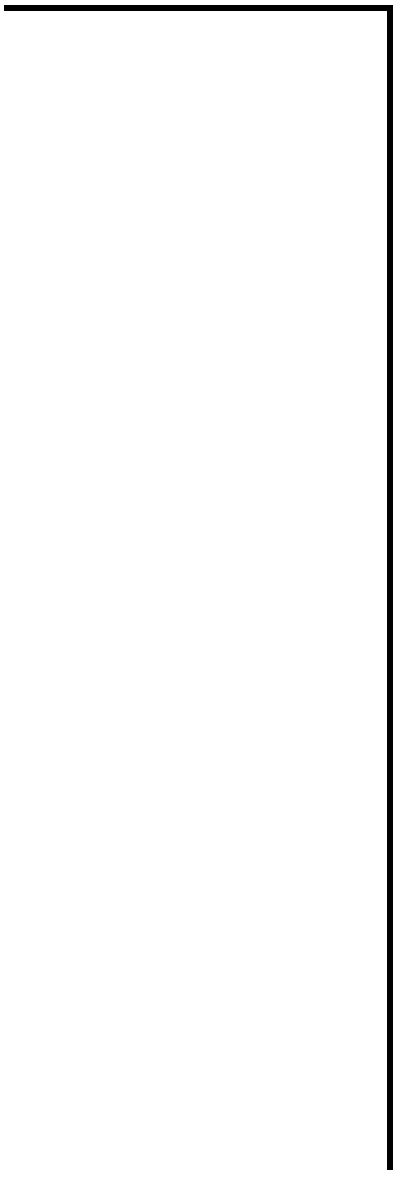
335	1.00	0.73	
335	1.00	0.73	

0.00

0.00

0.11

0.00





Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1,090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	30<70 Years
0.85	fraction of t	0<2 Years
0.72	fraction of t	2<16 Years
0.73	fraction of t	16<70 Years

Project: Valley Water Guadalupe River Bank Stabilization - Maolne Road
Date: 9/19/2024
Condition: Unmitigated Construction
Receptor: Existing Residence

Exposure Year	Calender Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2025	2.78E-01	3.55E-01	1,090	10.0	0.85	38.8
2	2026			1,090	10.0	0.85	
3	2027			745	4.75	0.72	
4	2028			745	3.00	0.72	
5	2029			745	3.00	0.72	
6	2030			745	3.00	0.72	
7	2031			745	3.00	0.72	
8	2032			745	3.00	0.72	
9	2033			745	3.00	0.72	
10	2034			745	3.00	0.72	
11	2035			745	3.00	0.72	
12	2036			745	3.00	0.72	
13	2037			745	3.00	0.72	
14	2038			745	3.00	0.72	
15	2039			745	3.00	0.72	
16	2040			745	3.00	0.72	
17	2041			335	1.70	0.73	
18	2042			335	1.00	0.73	
19	2043			335	1.00	0.73	
20	2044			335	1.00	0.73	
21	2045			335	1.00	0.73	
22	2046			335	1.00	0.73	
23	2047			335	1.00	0.73	
24	2048			335	1.00	0.73	
25	2049			335	1.00	0.73	
26	2050			335	1.00	0.73	
27	2051			335	1.00	0.73	
28	2052			335	1.00	0.73	
29	2053			335	1.00	0.73	
30	2054			335	1.00	0.73	

0.36	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
Yes	Significant?
0.06	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
38.8	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
1.74	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1,090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	30<70 Years
0.85	fraction of t	0<2 Years
0.72	fraction of t	2<16 Years
0.73	fraction of t	16<70 Years

Project: Valley Water Guadalupe River Bank Stabilization - Maolne Road
Date: 9/19/2024
Condition: Mitigated Construction
Receptor: Existing Residence

Exposure Year	Calender Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2025	4.99E-02	1.28E-01	1,090	10.0	0.85	6.97
2	2026			1,090	10.0	0.85	
3	2027			745	4.75	0.72	
4	2028			745	3.00	0.72	
5	2029			745	3.00	0.72	
6	2030			745	3.00	0.72	
7	2031			745	3.00	0.72	
8	2032			745	3.00	0.72	
9	2033			745	3.00	0.72	
10	2034			745	3.00	0.72	
11	2035			745	3.00	0.72	
12	2036			745	3.00	0.72	
13	2037			745	3.00	0.72	
14	2038			745	3.00	0.72	
15	2039			745	3.00	0.72	
16	2040			745	3.00	0.72	
17	2041			335	1.70	0.73	
18	2042			335	1.00	0.73	
19	2043			335	1.00	0.73	
20	2044			335	1.00	0.73	
21	2045			335	1.00	0.73	
22	2046			335	1.00	0.73	
23	2047			335	1.00	0.73	
24	2048			335	1.00	0.73	
25	2049			335	1.00	0.73	
26	2050			335	1.00	0.73	
27	2051			335	1.00	0.73	
28	2052			335	1.00	0.73	
29	2053			335	1.00	0.73	
30	2054			335	1.00	0.73	

0.13	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
6.97	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.31	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?

Control Pathway

Dispersion Options

Titles

C:\Users\MikeRatte\Documents\Projects\Valley Water Guadalupe River B

Dispersion Options

☑ Regulatory Default ☐ Non-Default Options

Dispersion Coefficient

Rural

Output Type

☑ Concentration
☐ Total Deposition (Dry & Wet)
☐ Dry Deposition
☐ Wet Deposition

Plume Depletion

☐ Dry Removal
☐ Wet Removal

Output Warnings

☐ No Output Warnings
☐ Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

SO2

Averaging Time Options

Hours ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 6 ☐ 8 ☐ 12 ☐ 24

☐ Month ☑ Period ☐ Annual

Exponential Decay

Option not available

Terrain Height Options

☐ Flat ☑ Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

☑ Yes ☐ No

Default Height = 1.80 m

Control Pathway

Optional Files

Re-Start File	Init File	Multi-Year Analyses	Event Input File	Error Listing File
☐	☐	☐	☐	■

Detailed Error Listing File

Filename: BlossomHill.err

Source Pathway - Source Inputs

Polygon Area Sources

Source Type: AREA POLY

Source: PAREA1

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
57.22	0.93	0.00242	1.26	4	600189.69	4123275.92
		0.00242			600196.72	4123275.77
		0.00242			600196.22	4123239.33
		0.00242			600180.25	4123241.26

Source Pathway

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Source Groups

Source Group ID: SRCGP1	List of Sources in Group (Source Range or Single Sources)
	PAREA1

Variable Emissions

Source Pathway

Hour / Day-of-Week Emission Rate Variation

Scenario: Scenario 1

Source ID: **PAREA1**

Hour	Mon	Tues	Wed	Thr	Fri	Sat	Sun
1:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8:00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
9:00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
10:00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
11:00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
12:00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
13:00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
14:00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
15:00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
16:00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
17:00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
18:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Meteorology Pathway

Met Input Data

Surface Met Data

Filename: ..\..\San Jose Intl Airport (KSJC)\AERMOD.SFC
Format Type: Default AERMET format

Profile Met Data

Filename: ..\..\San Jose Intl Airport (KSJC)\AERMOD.PFL
Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 15.50 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface Upper Air		2013 2013			OAKLAND/WSO AP

Data Period

Data Period to Process

Start Date: 1/1/2013 Start Hour: 1 End Date: 12/31/2017 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Output Pathway

Output File of US NAAQS

Path for US NAAQS: BlossomHill.AD

NAAQS Auto-Generated Maximum Daily Files (MAXDAILY)

Active	Source Group ID	File Name
Yes	SRCGP1	MAXDAILY_SRCGP1_SO2.DAT

NAAQS Auto-Generated Maximum Daily By Year Files (MXDYBYYR)

Active	Source Group ID	File Name
Yes	SRCGP1	MXDYBYYR_SRCGP1_SO2.DAT

Results Summary

C:\Users\MikeRatte\Documents\Projects\Valley Water Guadalupe River B

SO2 - Concentration - Source Group: SRCGP1

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		5.25831	ug/m^3	599998.02	4123409.86	56.75	1.80	56.75	

Control Pathway

AERMOD

Dispersion Options

Titles

C:\Users\MikeRatte\Documents\Projects\Valley Water Guadalupe River B

Dispersion Options

☑ Regulatory Default ☐ Non-Default Options

Dispersion Coefficient

Rural

Output Type

☑ Concentration
☐ Total Deposition (Dry & Wet)
☐ Dry Deposition
☐ Wet Deposition

Plume Depletion

☐ Dry Removal
☐ Wet Removal

Output Warnings

☐ No Output Warnings
☐ Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

OTHER - DPM

Averaging Time Options

Hours ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 6 ☐ 8 ☐ 12 ☐ 24

☐ Month ☑ Period ☐ Annual

Exponential Decay

Option not available

Terrain Height Options

☐ Flat ☑ Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

☑ Yes ☐ No

Default Height = 1.80 m

Control Pathway

Optional Files

Re-Start File	Init File	Multi-Year Analyses	Event Input File	Error Listing File
☐	☐	☐	☐	■

Detailed Error Listing File

Filename: MaloneRoad.err

Source Pathway - Source Inputs

Polygon Area Sources

Source Type: AREA POLY

Source: PAREA1

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
38.45	0.93	0.00517	1.26	6	599180.45	4128513.49
		0.00517			599186.64	4128514.19
		0.00517			599189.61	4128506.72
		0.00517			599192.04	4128498.70
		0.00517			599186.45	4128497.26
		0.00517			599183.90	4128506.01

Source Type: AREA POLY

Source: PAREA2

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
39.16	0.93	0.00363	1.26	5	599200.25	4128355.98
		0.00363			599202.01	4128350.69
		0.00363			599179.92	4128341.76
		0.00363			599176.98	4128346.58
		0.00363			599187.44	4128350.93

Source Pathway

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Variable Emissions

Hour-of-Day / Day-of-Week Emission Rate Variation

Scenario: Scenario 1

Source ID: PAREA1

Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Source ID: PAREA2

Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	1.00	1.00	1.00	1.00	1.00
	13 - 18	1.00	1.00	1.00	1.00	1.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Meteorology Pathway

Met Input Data

Surface Met Data

Filename: ..\..\San Jose Intl Airport (KSJC)\AERMOD.SFC
Format Type: Default AERMET format

Profile Met Data

Filename: ..\..\San Jose Intl Airport (KSJC)\AERMOD.PFL
Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 15.50 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface Upper Air		2013 2013			OAKLAND/WSO AP

Data Period

Data Period to Process

Start Date: 1/1/2013 Start Hour: 1 End Date: 12/31/2017 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Results Summary

C:\Users\MikeRatte\Documents\Projects\Valley Water Guadalupe River B

DPM - Concentration - Source Group: ALL

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		86.76827	ug/m^3	599169.67	4128371.42	39.00	1.80	39.00	

APPENDIX B

Noise Technical Report

VALLEY WATER GUADALUPE RIVERBANK STABILIZATION PROJECT

NOISE TECHNICAL REPORT

SEPTEMBER 27, 2024



Prepared by:

RCH GROUP
planning & environmental consulting

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NOISE TECHNICAL REPORT

VALLEY WATER GUADALUPE RIVERBANK STABILIZATION PROJECT

INTRODUCTION

This report provides an overview of existing noise levels measured at the proposed Project site, local noise regulatory framework, and an analysis of potential noise impacts that would result from implementation of the proposed Project. This report is prepared in a format to answer the noise issues identified in Appendix G of the State CEQA Guidelines.

PROJECT OVERVIEW

The Santa Clara Valley Water District (Valley Water) is currently proposing the Guadalupe Riverbank Stabilization Project (Project). The proposed Project involves bank stabilization at two locations where in-stream structures along the Guadalupe River have experienced erosion and subsequent damage to the embankment and potential neighboring properties. The in-stream structures are located at the Guadalupe River crossings at Malone Road and Blossom Hill Road in the City of San Jose. The proposed Project would consist of repairs needed to address existing broken concrete lined channel, failed gabion baskets, and removal of overgrown vegetation and trees. The repairs would span approximately 480 feet along the length of the channel. The proposed Project would prevent ongoing erosion and subsequent damage to the embankment and potential neighboring properties.

The proposed Project sites are located within the City of San Jose, on Valley Water property, as shown in **Figure 1: Regional Overview.** Repair work would occur at the Guadalupe River crossing upstream of Malone Road, Guadalupe River crossing downstream of Malone Road, and at the Guadalupe River Crossing located at Blossom Hill Road. The Guadalupe River crossing locations where project work would occur are shown in **Figure 2: Project Location – Blossom Hill Road** and **Figure 3: Project Location – Malone Road.**

Adjacent residential neighborhoods and urban development surround both Project sites. The nearest residences to the Malone Road Project site are approximately 50 feet surrounding the site along Malone Road and Almaden Road. The nearest residences to the Blossom Hill Road Project site are approximately 450 feet northeast along Blossom River Drive and approximately 760 feet northwest (Avana Almaden Apartments).

Figure 1 Regional Overview



Figure 2 Project Location – Blossom Hill Road

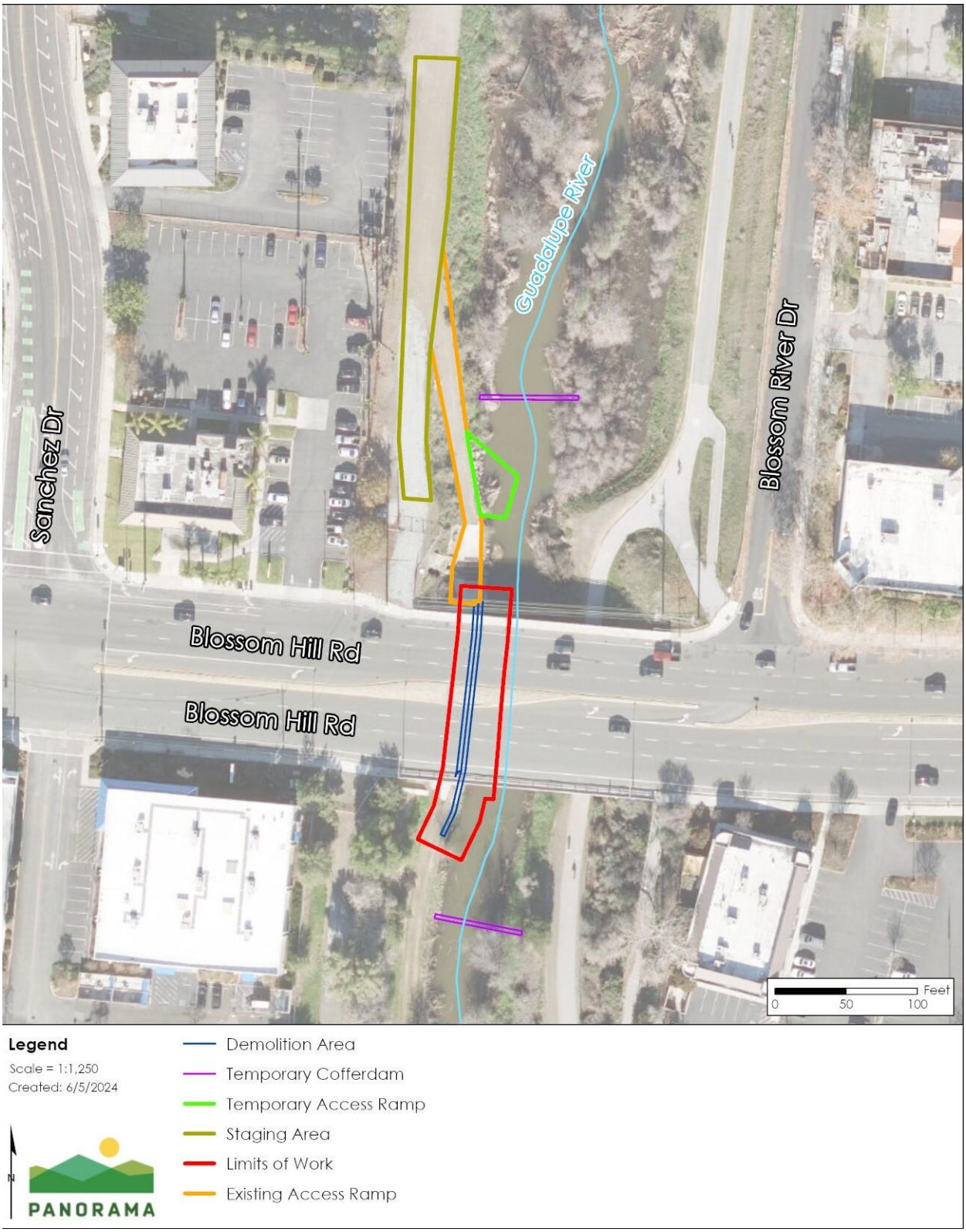


Figure 3 Project Location – Malone Road



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

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)[1]; average day–night 24-hour average sound level (Ldn)[2] with a nighttime increase of 10 dB to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL)[3], also a 24-hour average that includes both an evening and a nighttime sensitivity weighting. **Table 1** identifies dB levels for common sounds heard in the environment.

[1] 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.

[2] 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.

[3] 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.

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, 1998a)

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.

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). Roadways with moving vehicles (known as a “line” source), typically attenuate at a lower rate, approximately 3 to 4.5 dB per doubling, that also depends on ground absorption (Caltrans, 1998b). Physical barriers located between a noise source and the noise receptor, such as berms, sound walls, or intervening topography increase the attenuation that occurs by distance alone.

VIBRATION

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal and is typically expressed in units of inches per second (in/sec). The PPV is the most frequently used to describe vibration impacts on buildings. Some common sources of ground-borne vibration are trains, heavy trucks traveling on rough roads, and construction activities such as blasting, pile driving, and operation of heavy earthmoving equipment.

REGULATORY CONTEXT

Federal and State

There are no federal or State noise standards that regulate noise issues related to the proposed Project.

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 San Jose General Plan and San Jose Municipal Code for guidance.

City of San Jose General Plan

The Envision San Jose 2040 General Plan's Environmental Leadership chapter sets forth policies with the goal of minimizing the impact of noise on people in the City (City of San Jose, 2011). Relevant goals and policies from the Noise and Vibration section of the Environmental Leadership chapter are listed below.

> **Policy EC-1.7**: Require construction operations within San Jose to use best available noise suppression devices and techniques and limit construction hours near residential uses per the City's Municipal Code. The City considers significant construction noise impacts to occur if a project located within 500 feet of residential uses or 200 feet of commercial or office uses would:
>
> - Involve substantial noise generating activities (such as building demolition, grading, excavation, pile driving, use of impact equipment, or building framing) continuing for more than 12 months.
>
> For such large or complex projects, a construction noise logistics plan that specifies hours of construction, noise and vibration minimization measures, posting or notification of construction schedules, and designation of a noise disturbance coordinator who would respond to neighborhood complaints will be required to be in place prior to the start of construction and implemented during construction to reduce noise impacts on neighboring residents and other uses.

City of San Jose Municipal Code (Title 20 – Zoning)

The City of San Jose Municipal Code contains a Zoning Ordinance (Title 20) that contains noise performance standards that limit noise levels at adjacent properties and applicable hours of construction. The following regulations are relevant to the proposed Project:

> Chapter 20.30.700(B)(2): The sound pressure level generated by any use or combination of uses on a property shall not exceed the decibel levels indicated in **Table 2** at any property line, except upon issuance and in compliance with a Conditional Use Permit.

TABLE 2. NOISE STANDARDS

	Maximum Noise Level in Decibels at the Property Line
Any residential or non-residential use	55

SOURCE: San Jose Municipal Code, Part 7, Chapter 20.30.700, Table 20-85.

> Chapter 20.100.450 (Hours of construction within 500 feet of a residential unit): A) Unless otherwise expressly allowed in a development permit or other planning approval, no applicant or agent of an applicant shall suffer or allow any construction activity on a site located within 500 feet of a residential unit before 7:00 a.m. or after 7:00 p.m., Monday through Friday, or at any time on weekends. B) Without limiting the scope of Section 20.100.310, no applicant or agent of an applicant shall suffer or allow any construction activity on a site subject to a development permit or other planning approval located within 500 feet of a residential unit at any time when that activity is not allowed under the development permit or planning approval. C) This section is applicable whenever a development permit or other planning approval is required for construction activity.

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to ambient noise levels than others due to the amount of noise exposure, in terms of both duration and insulation from noise, and the types of activities typically involved. Residences, hospitals, schools, and nursing homes are generally more sensitive to noise than commercial and industrial land uses. Noise sensitive receptors identified in the Envision San Jose 2040 General Plan include residential, hotels, motels, hospitals, and residential care. The nearest sensitive receptors to the Malone Road site are homes surrounding the Project site to the west (as close as approximately 50 feet away). The nearest sensitive receptors to the Blossom Hill Road site are the Blossom River Apartments (approximately 450 feet northeast of the site) and the Avana Almaden Apartments (approximately 760 feet northwest of the site).

EXISTING NOISE ENVIRONMENT

To quantify existing ambient noise levels, this noise study included 7 short-term (10-minute) noise measurements in and around the proposed Project sites. A Larson Davis SoundTrack LxT 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 4: Noise Measurement Location (Sites 1-4) Malone Road site** and **Figure 5: Noise Measurement Location (Sites 5-7) Blossom Hill Road site** show the noise measurement locations on a map. Based on observations from the short-term measurements, the major source

of existing noise in the Project vicinity of both sites is traffic noise on local roadways (i.e., Almaden Road, Malone Road, and Blossom Hill Road). Additional minor noise sources included parking lot noise and dogs barking.

TABLE 3 EXISTING NOISE LEVELS

Location	Time Period	Noise Levels (dB)	Noise Sources
Site 1: Directly south of Apartment complex on Almaden Road. Approximately 25 feet away from the centerline of Almaden Road and approximately 180 feet east of the proposed Project site.	Wednesday May 1, 2024 10:58 a.m. to 11:08 a.m.	5-minute Leq's: 66, 60	Large truck passby was 84 dB. Cars passing on Almaden Road were 65-70 dB. Construction activities occurring approximately 250 feet away was 53-58 dB.
Site 2: Nearby the intersection of Almaden Road and River Glen Drive. Approximately 370 feet southeast of the proposed Project site	Wednesday May 1, 2024 11:09 a.m. to 11:19 a.m.	5-minute Leq's: 64, 64	Cars passing on Almaden Road was 62-76 dB. Dog barking nearby was 65 dB.
Site 3: Near home located on Delbarr Court and site access gate. Approximately 150 feet west of the proposed Project site.	Wednesday May 1, 2024 11:22 a.m. to 11:32 a.m.	5-minute Leq's: 55, 55	Construction occurring at home to the north was 62-70 dB. Cars passing on Malone Road were 55-62 dB.
Site 4: Residential neighborhood on Delbarr Court. Approximately 150 feet west of the proposed Project site.	Wednesday May 1, 2024 11:34 a.m. to 11:44 a.m.	5-minute Leq's: 49, 54	Quiet neighborhood. Resident starting car nearby meter was 69 dB. Cars passing on Malone Road were 52-55 dB.
Site 5: Intersection of Blossom River Drive and restaurant access road, directly west of Blossom River Apartment Complex.	Wednesday May 1, 2024 12:01 p.m. to 12:11 p.m.	5-minute Leq's: 62, 63	Cars passing on Blossom Hill Drive was 66-78 dB. Constant traffic on Blossom Hill Road was 55-58 dB.
Site 6: At Denny's parking lot, near the proposed Project site staging area.	Wednesday May 1, 2024 12:17 p.m. to 12:27 p.m.	5-minute Leq's: 57, 58	Parking lot noise was 60-66 dB. Constant traffic on Blossom Hill Drive was 58-63 dB.
Site 7: Commercial parking lot, approximately 300 feet south of the proposed Project site.	Wednesday May 1, 2024 12:30 p.m. to 12:40 p.m.	5-minute Leq's: 59, 55	Parking lot noise was 60-81 dB. Constant traffic on Blossom Hill Drive was 52-57 dB.

SOURCE: RCH GROUP, 2024

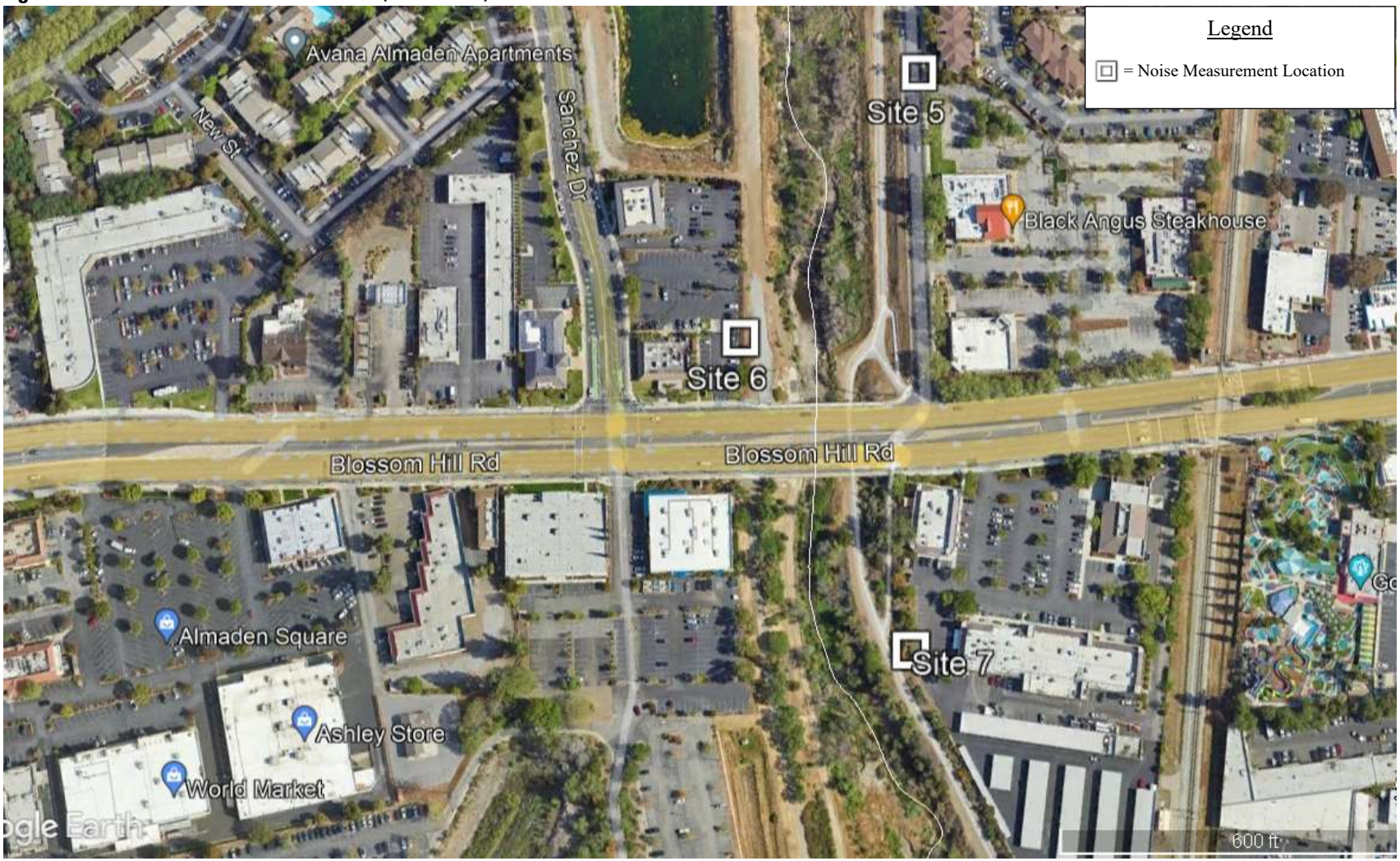
Figure 4: Noise Measurement Locations (Sites 1 - 4) Malone Road site



RCH GROUP

Source: RCH Group and Google Earth, 2024.

Figure 5: Noise Measurement Location (Sites 5 - 7) Blossom Hill Road site



RCH GROUP

Source: RCH Group and Google Earth, 2024.

SIGNIFICANCE THRESHOLDS

Appendix G of the State CEQA Guidelines states that a project would result in a significant impact to Noise if it 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;
- Generate excessive groundborne vibration or groundborne noise levels; or
- 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.
  - The proposed Project sites are not within the vicinity of a public airport or private airstrip, or within an airport land use plan. The nearest airport is the San Jose International Airport, located approximately 4.5 miles northwest of the Malone Road site and approximately 7.4 miles northwest of the Blossom Hill Road site. At this distance, airport noise would not be a significant source of noise at the proposed Project site and would have no impact on people working in the Project area. Therefore, airport noise impacts are not further discussed in this analysis.

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

Construction activities are anticipated to occur between June 15, 2025, and October 15, 2025, for approximately 86 work days. Construction is expected to occur between 7 a.m. and 7 p.m., Monday through Friday, and typically would include 8-hour workdays (consistent with Chapter 20.100.450 of the San Jose Municipal Code).

Construction activities would require the use of numerous pieces of noise-generating equipment, such as excavating machinery (e.g., excavators, loaders, etc.) and other construction equipment (e.g., tractors, backhoes, compactors, dump trucks, 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 operation being performed, the condition of the equipment, and the prevailing wind direction.

As discussed above, the nearest noise-sensitive receptors to Project construction would be the residences adjacent to the Malone Road site (as close as approximately 50 feet). The nearest noise-sensitive receptors to Project construction at the Blossom Hill Road site would be approximately 450 feet. Maximum noise levels for various types of construction equipment that could be used during Project construction at 50 and 450 feet 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 450 feet)
Excavator	81	57
Backhoe	79	55
Front End Loader	79	55
Tractor	84	60
Dump Truck	77	53
Compactor	83	59
Water Truck	80	56
Sweeper	82	58
Pickup Truck	77	53
Crane	81	57
Concrete Mixer Truck	79	55
Concrete Pump Truck	81	57
Generator[1,2]	58[2]	34[2]

NOTES:
L_{max} = maximum sound level
An attenuation rate of 7.5 per doubling distance was used to convert the FHWA noise levels at 50-feet to the noise levels at 450-feet.
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 contractors.
2. Reference noise level of 66 dB at 23 feet is assumed and is based on manufacturer specifications. An attenuation rate of 7.5 per doubling of distance was used to convert the generator noise levels at 23-feet to the noise levels at 50-feet and 450-feet.

SOURCE: Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide, 2006.

Construction would result in a temporary increase in ambient noise levels in the vicinity of both sites. As discussed above, noise generally attenuates at a rate of 6-7.5 dB per doubling distance. Based on the terrain at the Malone Road site (a "soft site") an attenuation of 7.5 dB is used in the calculations. However, there would be a significant amount of noise attenuation occurring at the Malone Road site because work occurring on the riverbank would well below street level and would block the line of site between construction equipment and the nearest residences. Therefore, this analysis conservatively assumes the depth of work occurring at the Malone Road site would provide an additional 12 dB noise reduction at the nearest residence. After accounting for shielding from the depth of the riverbank, the noise levels from construction at the Malone Road site at the nearest residence are predicted to be 46-72 dB, Lmax when construction equipment is used in the canal.

For the Blossom Hill Road site, work would also occur below street level, however, not as deep as the riverbank at the Malone Road site. This analysis conservatively assumes the depth of work occurring at the Blossom Hill Road site would provide an additional 5 dB noise reduction at the nearest apartment complex building. After accounting for shielding from the terrain, the noise levels from construction activities at the nearest apartment complex building are predicted to be 29-55 dB, Lmax when construction equipment is used in the canal. These noise levels would be masked by existing traffic noise from Blossom Hill Drive and Blossom Hill Road and would likely not be noticeable to residents since existing traffic noise levels from Blossom Hill Drive

and Blossom Hill Road ranged from 55-78 dB, Lmax nearby the Blossom River Apartment Complex (see **Table 4**, site 5).

As discussed above, construction is required to comply with the San Jose Noise Ordinance and would only occur between 7 a.m. and 7 p.m., Monday through Friday. However, a minimum of two generators would be used at each site where active dewatering would be required. These generators could potentially be used for 24-hours and thus would occur outside the allowable hours of construction in the San Jose Noise Ordinance. Note that no other construction equipment would be used during active dewatering activities that occur outside of the hours of 7 a.m. to 7 p.m.

This analysis conservatively assumes two generators would be operating simultaneously side by side on a trailer that would not be within the canal, 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 noise-sensitive receptors nearby the Malone Road site. This analysis uses a threshold of 55 dB, Lmax at the nearest residential property line during nighttime hours (7 p.m. to 7 a.m.) to determine if nighttime use of the generators would be a potentially significant impact (see **Table 2**). Noise levels from the generators exceeding 55 dB, Lmax at the nearest property line could potentially cause sleep disruption. For the Blossom Hill Road site, the generators are predicted to be 37[4] dB, Lmax at 450 feet. This would be well below the 55 dB, Lmax threshold and would not result in any nighttime noise impacts. For the Malone Road site, the generators are predicted to be 61 dB, Lmax at 50 feet. Note, this is an estimate based on current equipment specifications. This noise level would exceed the 55 dB, Lmax threshold. Thus, the use of the generators during nighttime hours would result in a potentially significant impact at the Malone Road site. Implementation of **Mitigation Measure NOI-1** would attenuate noise from the generators by approximately 20 dB and below the 55 dB, Lmax threshold (61 dB – 20 dB = 41 dB). Therefore, construction noise impacts would be less-than-significant with mitigation.

> **Mitigation Measure NOI-1:** If generators are used during nighttime hours (7 p.m. to 7 a.m.) at the Malone Road site, the applicant shall install four-sided noise barriers/sound blankets around the generators.

Operational Noise Impacts

Once the bank stabilization at both locations is complete, there would be no change to both sites that would result in an increase in ambient noise levels in the vicinity of both locations (see **Table 3,** Sites 1-7 for existing ambient noise levels at both sites). Therefore, operational noise impacts would be less-than-significant.

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[4] This analysis assumes the two generators would be operating simultaneously side by side. Thus, the noise level from two generators operating simultaneously would result in a 3 dB increase from the noise of a single generator.

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). 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 vibration, a PPV threshold of 0.5 inch per second or greater can cause architectural damage and minor structural damage. The Federal Transit Administration recommends a threshold of 0.5 PPV for residential and commercial structures (FTA, 2006).

Depending on the location of construction, several pieces of heavy equipment that could be used for work at the Malone Road site could be used as close as 50 feet from the nearest residence. All other work at both sites would be far greater than 50 feet away from off-site structures. The estimated PPV for heavy construction equipment that could be used at 50 feet is summarized in **Table 5**.

TABLE 5. VIBRATION (PPV) LEVELS DURING CONSTRUCTION

Construction Equipment/Type of Construction	PPV at 25 feet (in/sec)	Distance to the nearest receptor	PPV at nearest receptors to the Project (in/sec)	Exceeds 0.5 in/sec PPV Threshold?
Excavator	0.175	50	0.06	No
Backhoe	0.028	50	0.01	No
Loader	0.0263	50	0.01	No

SOURCE: Construction Equipment PPV reference from NHDOT, *Ground Vibrations Emanating from Construction Equipment* (FHWA-NH-RD-12323W), 2012.

As shown in **Table 5**, the predicted vibration levels from construction activities would be less than the FTA recommended threshold of 0.5 PPV. Therefore, vibration impacts from construction would be less-than-significant.

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All images courtesy of Google Earth.

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