

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7 STANLEY REACH STABILIZATION PROJECT

Draft Initial Study / Mitigated Negative Declaration

Prepared for
Alameda County Flood Control and Water
Conservation District, Zone 7

August 2020





ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7

100 NORTH CANYONS PARKWAY, LIVERMORE, CA 94551 • PHONE (925) 454-5000 • FAX (925) 454-5727

**NOTICE OF AVAILABILITY/ NOTICE OF PUBLIC MEETING/
NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION
FOR THE STANLEY REACH STABILIZATION PROJECT**

NOTICE IS HEREBY GIVEN that the Draft Initial Study/Proposed Mitigated Negative Declaration (IS/MND) for the **Stanley Reach Stabilization Project** has been prepared in accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000 et seq.) and CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.). This is a Notice of Intent to adopt an MND for this project in accordance with CEQA Guidelines Section 15072.

Project Name: Stanley Reach Stabilization Project

Project Sponsor and CEQA Lead Agency: Alameda County Flood Control and Water Conservation District, Zone 7 (also known as Zone 7 Water Agency), 100 North Canyons Parkway, Livermore, CA 94551; phone (925) 454-5000.

Project Description: The Proposed Project is a component of the regional flood protection strategy for Arroyo Mocho in Zone 7's Service Area. Project objectives include:

- Repair channel damage and prevent future erosion and scouring;
- Restore flood control functionality; and,
- Support the goals of the 2013 project, which includes enhancing natural stream vegetation and improving fish passage and fish habitat potential.

Project Location: The proposed project is in Alameda County in the City of Livermore along an approximately 1.0-mile stretch of the Arroyo Mocho Stanley Reach flood control channel located north of Stanley Boulevard and Union Pacific Railroad, between North Murrieta Boulevard and Isabel Avenue (State Highway 84). The project would occur on public property owned by Zone 7. The project site is not located on any list enumerated under Section 65962.5 of the Government Code (concerning hazardous materials).

Public Review: The Draft MND will be available for public review period from **August 21, 2020, through September 22, 2020.**

The document is available for review and download on the Zone 7 website at <https://www.zone7water.com/library/environmental-review-documents>.

In accordance with State health restrictions due to COVID-19, the IS/MND will not be available for public viewing at Zone 7's office or at public libraries, as would normally occur. A limited number of printed copies can be made available by contacting Elke Rank at (925) 454-5005 or by email at erank@zone7water.com.

The public comment period for the Draft IS/MND closes at **5 p.m., September 22, 2020**. Comments on the Draft IS/MND should be submitted via mail or electronically to:

Elke Rank
Alameda County Flood Control and Water Conservation District, Zone 7
100 North Canyons Parkway
Livermore, CA 94551
erank@zone7water.com

Public Meeting: A public meeting only to receive comments on the Draft IS/MND for this project is scheduled for **September 9, 2020 at 5 p.m.** No project decisions will be made at this meeting. Due to public gathering limitations related to COVID-19, this meeting will be conducted through videoconferencing without a physical location from which members of the public may observe and offer public comment. You may access the hearings through Zoom or by telephone. Please visit Zone 7's website and view the agenda prior to the meeting to confirm the meeting details.

Project Approval: It is expected that the Zone 7 Board of Directors will consider adopting the Final IS/MND, which will reflect comments received on the draft document, at their regular meeting on **November 18, 2020, at 7 p.m.** Agendas are posted at <http://www.zone7water.com>.

For further information please contact Elke Rank at (925) 454-5005, or by email at erank@zone7water.com.

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Draft Initial Study / Mitigated Negative Declaration

Prepared for
Alameda County Flood Control and Water
Conservation District, Zone 7

August 2020

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CHAPTER 1

Introduction

1.1 Organization of the Document

This document is organized to assist the reader in understanding the potential impacts that the Stanley Reach Stabilization Project (Project) may have on the environment and to fulfill the requirements of the California Environmental Quality Act (CEQA).

Chapter 1, Introduction, describes this document’s purpose under CEQA, describes the public participation process, and summarizes the applicable regulatory requirements.

Chapter 2, Project Description, provides an introduction to the Project, including Project background, needs and objectives, and discusses the proposed facilities.

Chapter 3, Environmental Checklist, presents the CEQA Initial Study Environmental Checklist, analyzes environmental impacts resulting from the Project and describes mitigation measures that would avoid or reduce potential significant impacts to less-than-significant levels.

Chapter 4, Report Preparers, presents the individuals who have contributed to this Initial Study/Mitigated Negative Declaration.

Appendix A, Air Quality and Greenhouse Gas Emissions Estimates, includes the data inputs and results of the CalEEMod modeling conducted for the Project.

Appendix B, Special-Status Species List, includes lists provided by resource agencies identifying threatened and endangered species that may occur in the Project area.

Appendix C, Mitigation Monitoring and Reporting Plan, presents the Project’s *draft* Mitigation Monitoring and Reporting Plan organized in a tabular format, keyed to each mitigation measure incorporated into the Project.

1.2 Purpose of the Mitigated Negative Declaration

The Alameda County Flood Control and Water Conservation District, Zone 7 (hereafter “Zone 7 Water Agency” or “Zone 7”), acting as the Lead Agency under CEQA, is proposing to design and construct the Project in the Stanley Reach flood control channel owned by the Zone 7 Water Agency.

The purpose of the following Initial Study (IS) was to provide a basis for deciding whether to prepare an Environmental Impact Report, a Mitigated Negative Declaration (MND), or a Negative Declaration. Based on its findings, Zone 7 determined that a MND would satisfy the

requirements of CEQA (Public Resources Code, §21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, §15000 et seq.), as noted below.

CEQA encourages Lead Agencies and applicants to modify their projects to avoid significant adverse impacts to the environment.

Section 15063(d) of the CEQA Guidelines states the content requirements of an IS as follows:

15063(d) Contents. An Initial Study shall contain in brief form:

- (1) A description of the project including the location of the project;
- (2) An identification of the environmental setting;
- (3) An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
- (4) A discussion of the ways to mitigate the significant effects identified, if any;
- (5) An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls;
- (6) The name of the person or persons who prepared or participated in the Initial Study.

1.3 Decision to Prepare a Mitigated Negative Declaration for this Project

As noted above, this Project is subject to the requirements of CEQA and Zone 7 is the CEQA Lead Agency for this Project. Prior to making a decision to approve this Project, the Lead Agency must identify and document the potential significant environmental effects of the Project in accordance with CEQA. This IS/MND has been prepared under the direction of Zone 7 to fulfill these requirements.

The IS analysis indicates that some impacts would be potentially significant, but that Project changes and proposed mitigation measures would result in those impacts being reduced to less-than-significant levels. In accordance with CEQA Guidelines Section 15070, a MND is the appropriate document for this Project because the IS identifies potentially significant effects; however:

- a. Revisions to the project plan were made that would avoid, or reduce, the effects to a point where clearly no significant effects would occur, and;
- b. 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 IS/MND is being circulated to local and State agencies, interested organizations, and individuals who might have had interest in, and wish to review and provide comments on, the project description, the proposed mitigation measures, or other aspects of the report. The 30-day public review period per CEQA Guidelines Section 15105(b) extends from August 21, 2020, through September 22, 2020.

The Draft IS/MND and supporting documentation has been posted on the Zone 7 website during this public review period:

<https://www.zone7water.com/library/environmental-review-documents>

In accordance with State health restrictions due to COVID-19, the Draft IS/MND will not be made available for public viewing at Zone 7's office or at local public libraries. A limited number of printed copies of the Draft IS/MND are available upon request. Please reach out to Elke Rank at (925) 454-5005 or by e-mail at erank@zone7water.com with your name and mailing address for a printed copy of the Draft IS/MND.

Written comments or questions regarding the Draft IS/MND were directed to the attention of Elke Rank at the address provided below.

Elke Rank
Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551
Phone: (925) 454-5005
e-mail: erank@zone7water.com

Technical inquiries about the Project were also directed to the Project Manager, Jeff Tang, at (925) 454-5075 or jtang@zone7water.com.

1.5 Agencies' Use of this Document

CEQA Responsible Agencies are State and local agencies that have some responsibility or authority for carrying out or approving a project. In many instances, these public agencies must make a discretionary decision to issue an approval or permit, provide right-of-way or encroachment, or provide funding or other resources that are critical to the execution of a project. Trustee agencies are State agencies that have the authority by law for the protection of natural resources held in trust for the public. The California Department of Fish and Wildlife and the State Lands Commission are examples of trustee agencies.

This IS/MND is intended to assist State and local agencies with some form of discretionary jurisdiction to carry out their responsibilities for permit review or approval authority over various aspects of a project. This Project would likely require specific permitting and/or review by the agencies listed in **Table 1-1**.

**TABLE 1-1
REQUIRED PERMITS AND APPROVALS**

Potential Permit or Approval	Agency
<ul style="list-style-type: none"> • Federal Clean Water Act Section 404 Nationwide Permit <ul style="list-style-type: none"> - Nationwide Permit 33 Temporary Construction - Nationwide Permit 43 Stormwater Management Facilities 	U.S. Army Corps of Engineers
<ul style="list-style-type: none"> • Federal Clean Water Act Section 401 Water Quality Certification • General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No., as amended by Order No. 2009-0009 DWQ) under the National Pollutant Discharge Elimination System (NPDES) <ul style="list-style-type: none"> - Stormwater Pollution Prevention Plan (SWPPP) - Post-Construction Stormwater Management Requirements for Development Projects 	San Francisco Bay Regional Water Quality Control Board (Region 2)
<ul style="list-style-type: none"> • Lake and Streambed Alteration Agreement (Section 1602) 	California Department of Fish and Wildlife

NOTE: The Federal Clean Water Act Section 404 Nationwide Permit, Federal Clean Water Act Section 401 Water Quality Certification, and Lake and Streambed Alteration Agreement (Section 1602) have all been submitted to their respective agencies and are currently under review.

CHAPTER 2

Project Description

2.1 Introduction and Background

The Alameda County Flood Control and Water Conservation District, Zone 7 (hereafter “Zone 7 Water Agency” or “Zone 7”) is one of 10 active flood zones in the county. Zone 7 Water Agency owns and maintains approximately 37 miles (i.e., about one third) of improved and unimproved channels in the Livermore-Amador Valley for regional flood protection in eastern Alameda County.

The Stanley Reach Stabilization Project (Project) proposed by Zone 7 would repair and stabilize a total of approximately 1,670-linear feet of channel at four sites within the Arroyo Mocho Stanley Reach flood channel located in the western portion of the City of Livermore between North Murrieta Boulevard on the east, and Isabel Avenue/State Highway 84 (Highway 84) on the west, and north of and paralleling the railroad and Stanley Boulevard. Pursuant to CEQA Guidelines §15051(a), Zone 7 is the Lead Agency for the Project for CEQA review.

In 2013, Zone 7 constructed the Arroyo Mocho Stanley Reach Riparian Restoration and Channel Enhancement Pilot Project (Stanley Reach Pilot Project) in an effort to improve available habitat and water quality conditions in this channelized bypass section of the Arroyo Mocho, referred to herein as Stanley Reach. However, in the winter of 2017, repeated heavy storm events and resulting storm streamflow caused the thalweg¹ to shift, causing the primary channel to outflank² the two roughened channel elements constructed in 2013. These large volume flow and high velocity storm events resulted in substantial scouring of the rock matrix and deposition of material at the downstream portion of the roughened channels.

In response to this and other storm events occurring statewide, in January 2017, the Governor of California proclaimed a state of emergency pursuant to the California Emergency Services Act, commencing with Section 8550 of the Government Code. In March 2017, the President of the United States issued a California Disaster Declaration under major declaration FEMA-4301-DR-CA to provide financial assistance for repair or replacement of facilities damaged by the severe winter storms from January 18 to January 23, 2017. Based on these emergency declarations, a statutory exemption under 14 California Code of Regulations CEQA Guidelines §15269(a) was prepared and filed with the Alameda County Clerk for the proposed Stanley Reach channel repairs in August 8, 2017 (State Clearinghouse No. 2017088132). The channel repairs covered under the emergency exemption included 208 flood control facilities damaged or destroyed as a

¹ The line of lowest elevation within a valley or watercourse

² To flow outside of the designated flowpath

result of a disaster in Zone 7, Alameda County. However, as the design of those repairs progressed, Zone 7 has opted to include other portions of Stanley Reach into the Project, also having been damaged in the 2017 storm events, making it a more comprehensive and holistic channel repair and stabilization project. Therefore, Zone 7, as Lead Agency, has decided to prepare this Initial Study/Mitigated Negative Declaration (IS/MND) to further analyze potential environmental impacts of the larger Project as currently envisioned.

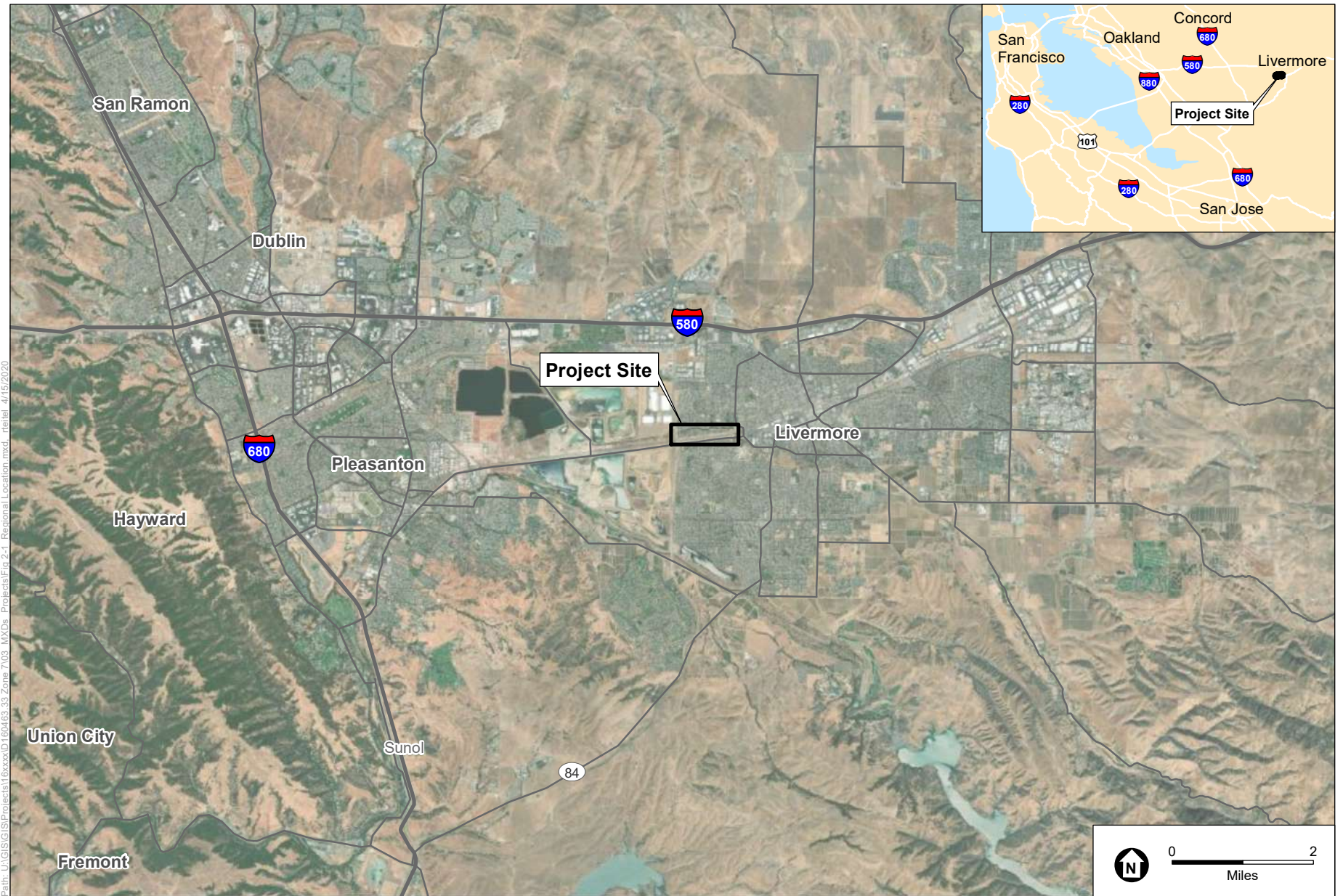
2.2 Project Objectives

The purpose of this Project is to repair and stabilize four sites within Stanley Reach that were improved as part of the Arroyo Mocho Stanley Reach Riparian Restoration and Channel Enhancement Pilot Project (Stanley Reach Pilot Project) constructed in 2013, but were destabilized or otherwise damaged during heavy winter storms in early 2017. The Project objectives include:

- Repair channel damage and prevent future erosion and scouring;
- Restore flood control functionality; and,
- Support the goals of the 2013 project, which includes enhancing natural stream vegetation and improving fish passage and fish habitat potential.

2.3 Project Location and Setting

The Project is located in Alameda County in the City of Livermore (see **Figure 2-1, Regional Location**) along an approximately 1.0-mile stretch of the Arroyo Mocho Stanley Reach flood control channel located north of Stanley Boulevard and Union Pacific Railroad, between North Murrieta Boulevard and Isabel Avenue. Arroyo Mocho is one of several creeks and flood control channels that traverse the valley floor entering San Francisco Bay via Alameda Creek. Stanley Reach was constructed as a bypass channel to convey high flows for flood protection, while the natural, historic Arroyo Mocho channel is located to the north and functions as a low flow channel through the adjacent neighborhood (see **Figure 2-2, Project Location**). The bypass channel is bordered by access maintenance roads along the northern and southern sides of the channel which are also owned by Zone 7 and not currently open for public use. The City of Livermore has plans to open the southern maintenance access road for recreational use, as an extension of the Iron Horse Trail, after a new pedestrian bridge over North Murrieta Boulevard is constructed, which began in April 2020. The maintenance access road would be closed for trail use during times of active Project construction. After this Project is completed, the City would pave the maintenance access road for trail use, likely in 2022. Single-family homes border the Project site to the north and east, the Union Pacific Railroad and Stanley Boulevard borders the Project to the south, with a single-family residential neighborhood to the south beyond that. Undeveloped parcels, industrial/ warehouse uses, and extractive mining are found immediately to the west across Highway 84/Isabel Avenue.



SOURCE: ESA, 2019

Zone 7 Stanley Reach Stabilization Project

Figure 2-1
Regional Location



2.4 Proposed Project

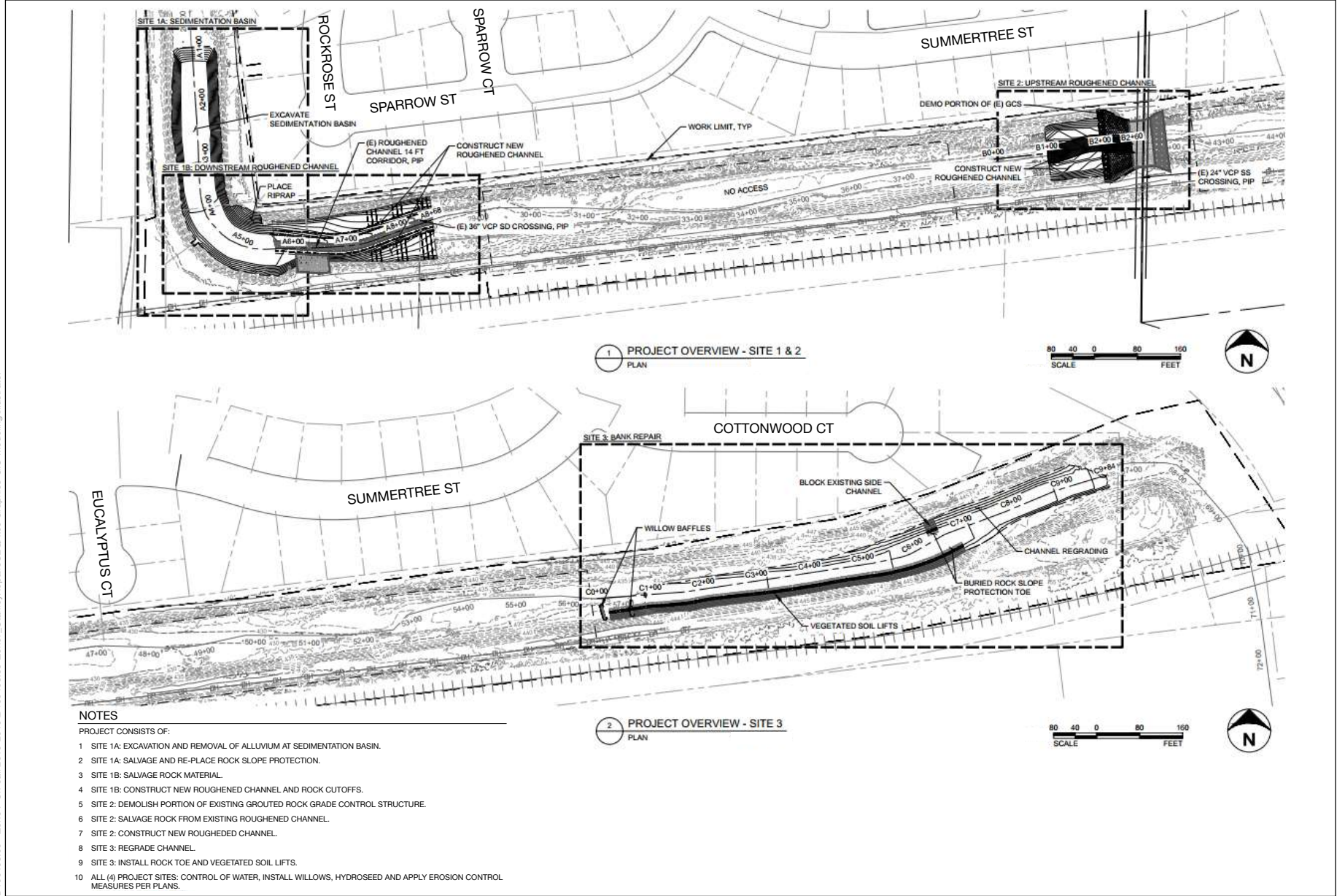
The Project would total approximately 1,670 linear feet of Stanley Reach channel, consisting of four designated work sites, referred to herein as Sites 1a, 1b, 2, and 3. Each Project site dimension and proposed repair is summarized in **Table 2-1**, below and shown on **Figure 2-3**, *Project Overview* and **Figures 2-3a-c**. Following these figures, **Figure 2-4** provides a rendering of the Project, 5 to 8 years' post-construction. A complete description of work that would be conducted at each site follows.

TABLE 2-1
ESTIMATED PROJECT SITE DIMENSIONS

Site No.	Repair Area (linear feet)	Repair Area (acre)	Repair Area (sq. ft.)	Proposed Repair
1a	510	0.86	37,650	<ul style="list-style-type: none"> Remove approximately 7,900 cubic yards (cy) of deposited alluvium material from the sedimentation basin Repair 2,500 square feet (sf) of riprap embankment by salvaging 330 cy of rock from Sites 1b and 2 Importing 40 cy of rock material
1b	300	0.39	17,050	<ul style="list-style-type: none"> Remove approximately 3,400 cy of deposited alluvium material Salvage 500 cy of rock material and re-purpose at Site 1a Import approximately 3,790 cy of rock material
2	160	0.43	18,980	<ul style="list-style-type: none"> Remove approximately 2,800 cy of deposited alluvium material Salvage 890 cy of rock material and re-purpose at Site 1a Import approximately 2,800 cy of rock material
3	700	1.33	58,000	<ul style="list-style-type: none"> Remove approximately 3,000 cy of deposited alluvium material Import approximately 2,450 cy of rock material Revegetation with willows and native grasses
Total	1,670	3.01	131,680	<ul style="list-style-type: none"> Remove a total of 17,100 cy of deposited alluvium material Salvage 1,720 cy of rock material and re-purpose at Site 1a Import approximately 9,080 cy of rock material Revegetation with willows and native grasses

2.4.1 Site 1a

Site 1a consists of a sedimentation basin approximately 510 linear feet in length located within Stanley Reach. Site 1a extends adjacent and parallel to Isabel Avenue and downstream (north) of Site 1b (see Figures 2-3 and 2-3a). A substantial amount of sediment has accumulated in the basin since the 2017 storm events, and continued to accumulate through 2018, resulting in the need for periodic sediment removal in order to remain effective. Site 1a would be restored to the original design elevations by excavating all the accumulated sediment, consisting of approximately 7,900 cubic yards as shown in Table 2-1. By comparison, sediment removal as part of the pilot project in 2013 and in the summer of 2017 consisted of approximately 3,500 cubic yards and 8,100 cubic yards, respectively. The fine sediment removed from the basin is expected to either be reused onsite for the Project or re-purposed at other locations within the Zone 7 service area for out-of-channel improvements, such as road repairs.

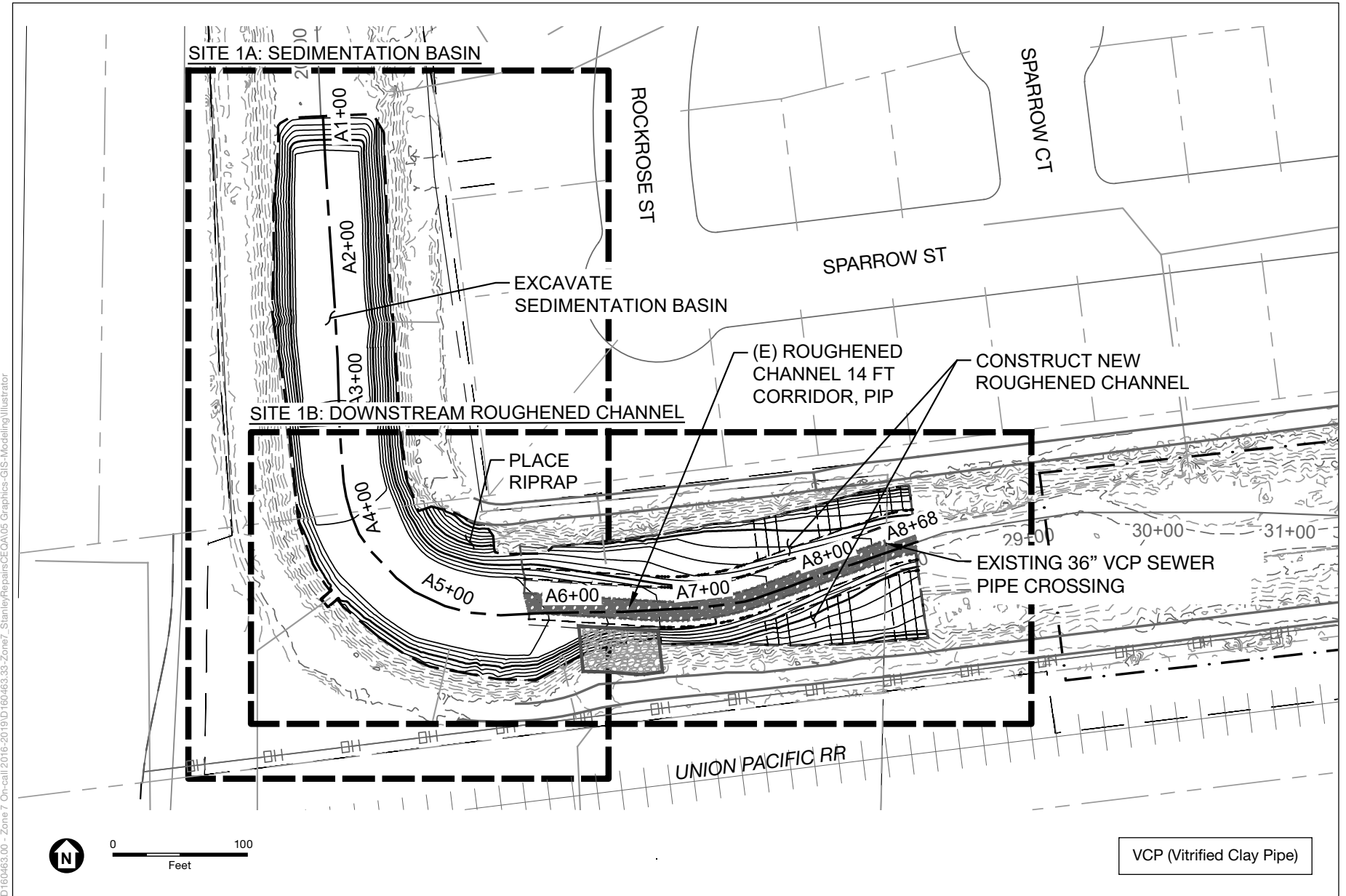


SOURCE: ESA, 2020

Zone 7 Stanley Reach Stabilization Project

Figure 2-3
Project Overview





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SOURCE: ESA, 2020

Zone 7 Stanley Reach Stabilization Project



Figure 2-3a
Sites 1a and 1b

Existing riprap on the inside bend of the channel bank near the intersection of Rockrose Street and Sparrow Street, from the top of the basin to approximately the edge of the maintenance road, is currently in poor condition. New riprap would be placed in approximately the same extents as the existing riprap. The new area of riprap would be approximately 2,500 square feet with a depth of approximately 4 feet. Existing riprap that meets Project specifications would be salvaged from other locations in the Project area and placed in this location. It is anticipated that approximately 330 cubic yards of salvaged rock from Sites 1b and 2 would be used to repair the embankment on Site 1a and 40 cubic yards of rock imported. A cofferdam would also be installed downstream of Site 1a, refer to Figure 2-3a and Section 2.5.5 for more details regarding dewatering of each site.

2.4.2 Site 1b

Site 1b is approximately 300 linear feet and is located just east of Isabel Avenue and Site 1a, parallel to the railroad and Stanley Boulevard (see Figures 2-3 and 2-3a). Construction activities would include repair of portions of the existing roughened channel, excavate and remove accumulated sediment from the downstream portion of the roughened channel, and salvage rock on the margins of the roughened channel for reuse at the Site 1a repairs.

As shown above in Table 2-1, approximately 3,790 cubic yards of rock material would be imported to recreate the roughened channel and repair the floodplain terraces. Another 500 cubic yards of existing rock material would be salvaged and reused.

In order to prevent future flanking and bank erosion, the roughened rock channel would be widened to span the entire width of the floodway³, which includes approximately 6 to 8 feet above the channel thalweg. On the north (right) bank, the roughened rock channel would be widened by 20 to 45 feet over the entire length of the feature (300 linear feet). On the south (left) bank, the roughened rock channel would be widened by 20 to 55 feet over only the upstream, or eastern, 140 feet of the feature. The total expansion in area of roughened rock channel would be approximately 17,050 square feet, at a depth of 6 feet, and require the placement of approximately 3,790 cubic yards of new rock. Existing floodplain sediments would be excavated and graded over top of the rock to recreate the existing floodplain terrace elevations.

The roughened channel would be constructed from loose boulders and designed to mimic natural bed conditions. The channel was designed to create conditions conducive to fish passage by spreading the change in grade over approximately 300 feet of channel length and providing a low-flow pathway. The Project includes the removal and off-haul of approximately 3,400 cubic yards of loose sand and gravel material that has deposited on the roughened channel.

2.4.3 Site 2

Site 2 is approximately 160 linear feet long and is located approximately 1,100 linear feet upstream (east) of Site 1b at the midway point of the Stanley Reach channel (see Figures 2-3 and 2-3b).

³ A floodway includes the channel and adjacent overbank areas necessary to effectively convey floodwaters.

Construction activities would include demolition and removal of the portion of the existing grouted grade control structure that is downstream of the existing City of Livermore 24-inch sanitary sewer pipe that crosses the channel near existing grade, see Figure 2-3b for details. The cutoff wall downstream of the sanitary sewer pipe and all existing grout and rock upstream of this location would be left in place. In addition, repair and reconstruction of the existing roughened channel and adjacent banks within the footprint of the existing roughened channel and grouted grade control structure would occur.

As shown above in Table 2-1, approximately 2,800 cubic yards of deposited alluvium material would be removed and another 890 cubic yards of existing rock material would be salvaged and reused at Site 1a. The repair area would consist of: demolition of the existing grade control structure; the existing roughened channel footprint; and placement of new rock material and widening of adjacent banks. The total repair area would consist of 18,980 square feet. The existing grade control structure would be replaced with an un-cemented rock matrix.

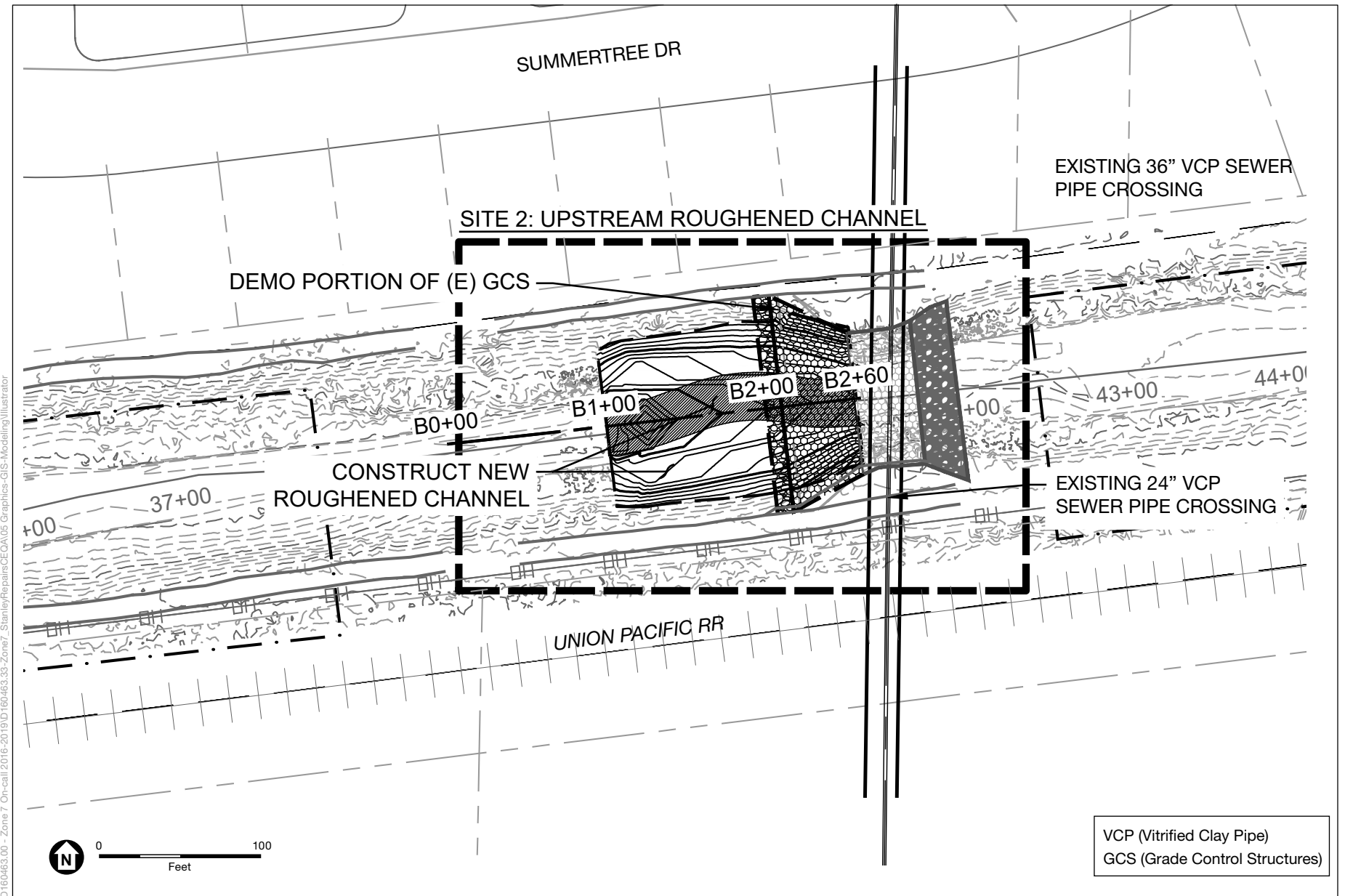
Rock material within the existing roughened channel footprint would be placed in a similar stable geometry with appropriately sized rock material. The new rock, would be installed within the active channel and along the northern (right) and southern (left) banks of the channel to create a roughened channel as described above for Site 1b to prevent future outflanking and erosion. Placement of new rock material would cover a total of approximately 9,220 square feet with a fill volume of approximately 2,800 cubic yards, effectively widening the roughened channel structure to the channel bed margins. On the northern (right) bank, the roughened rock channel would be widened by 20 to 30 feet over the entire length of the feature, approximately 160 feet. On the southern (left) bank, the roughened rock channel would be widened by 25 to 35 feet over the entire length of the feature (i.e., 160 feet).

Following installation of the rock materials, native soil would backfill over the rock material to recreate a floodplain bench and channel side slopes to match existing conditions. The exposed soils on the channel slopes would be stabilized with seeding and biodegradable erosion control fabric.

2.4.4 Site 3

The Site 3 bank repair area is approximately 700 linear feet long and is located approximately 80 linear feet downstream (west) from the pedestrian bridge on the west side of North Murrieta Boulevard (see Figures 2-3 and 2-3c). The Site 3 repair area would be excavated and graded to match the undisturbed bank slope.

A 3-foot thick layer of riprap would be placed below the toe of the existing channel bed to resist erosion, and it would continue up the slope of the bank. The slope would be rebuilt with biodegradable-fabric-wrapped lifts of soil. Willow stems would also be placed throughout the rock toe and extend down through the riprap. The willow stems would be planted within cardboard tubes and placed amongst the riprap and native soil backfill at a density of 4 stems per linear foot. The exposed soils on the channel slopes would be stabilized with a native grass seed mix.



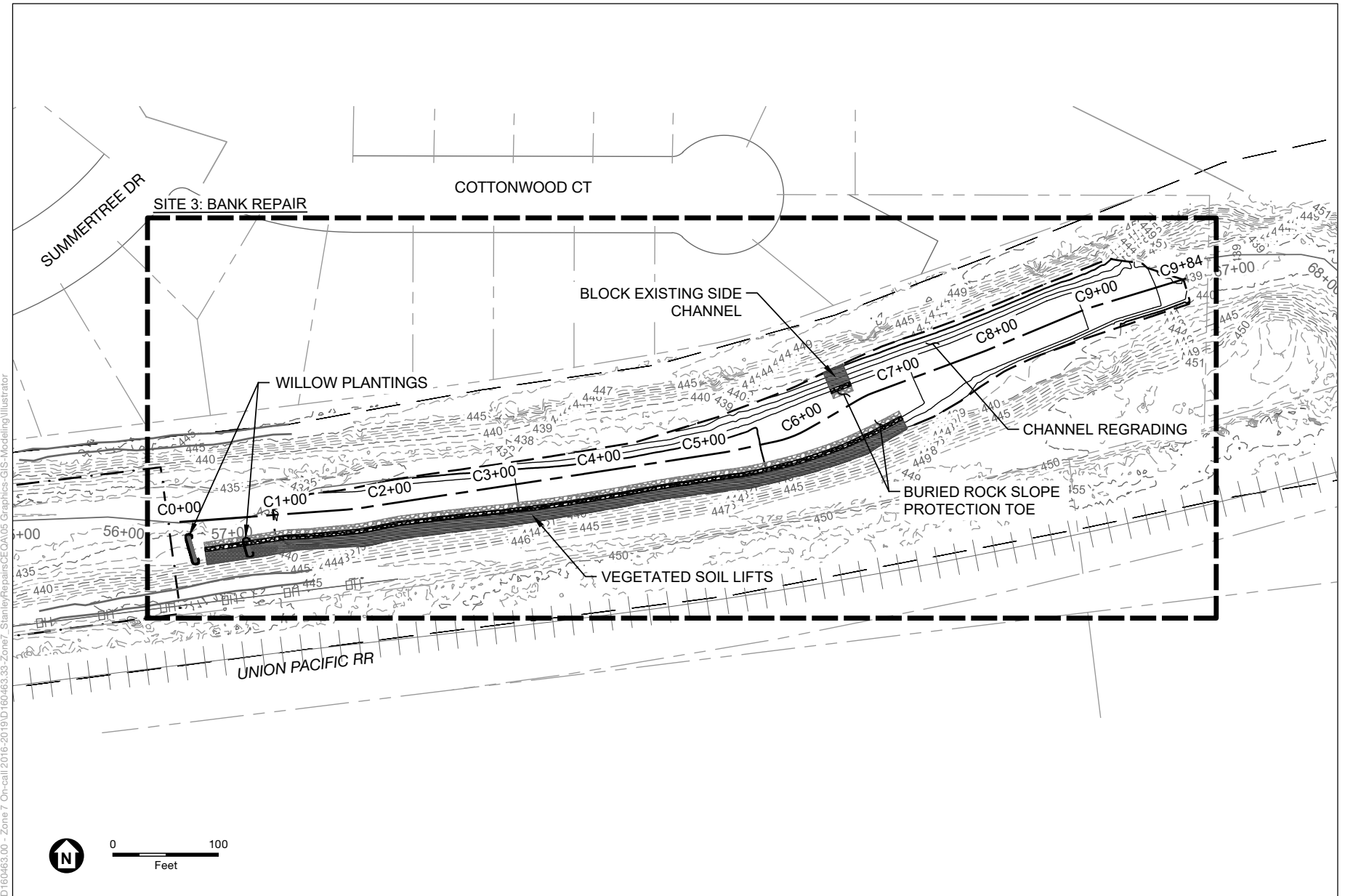
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SOURCE: ESA, 2020

Zone 7 Stanley Reach Stabilization Project

Figure 2-3b
Site 2



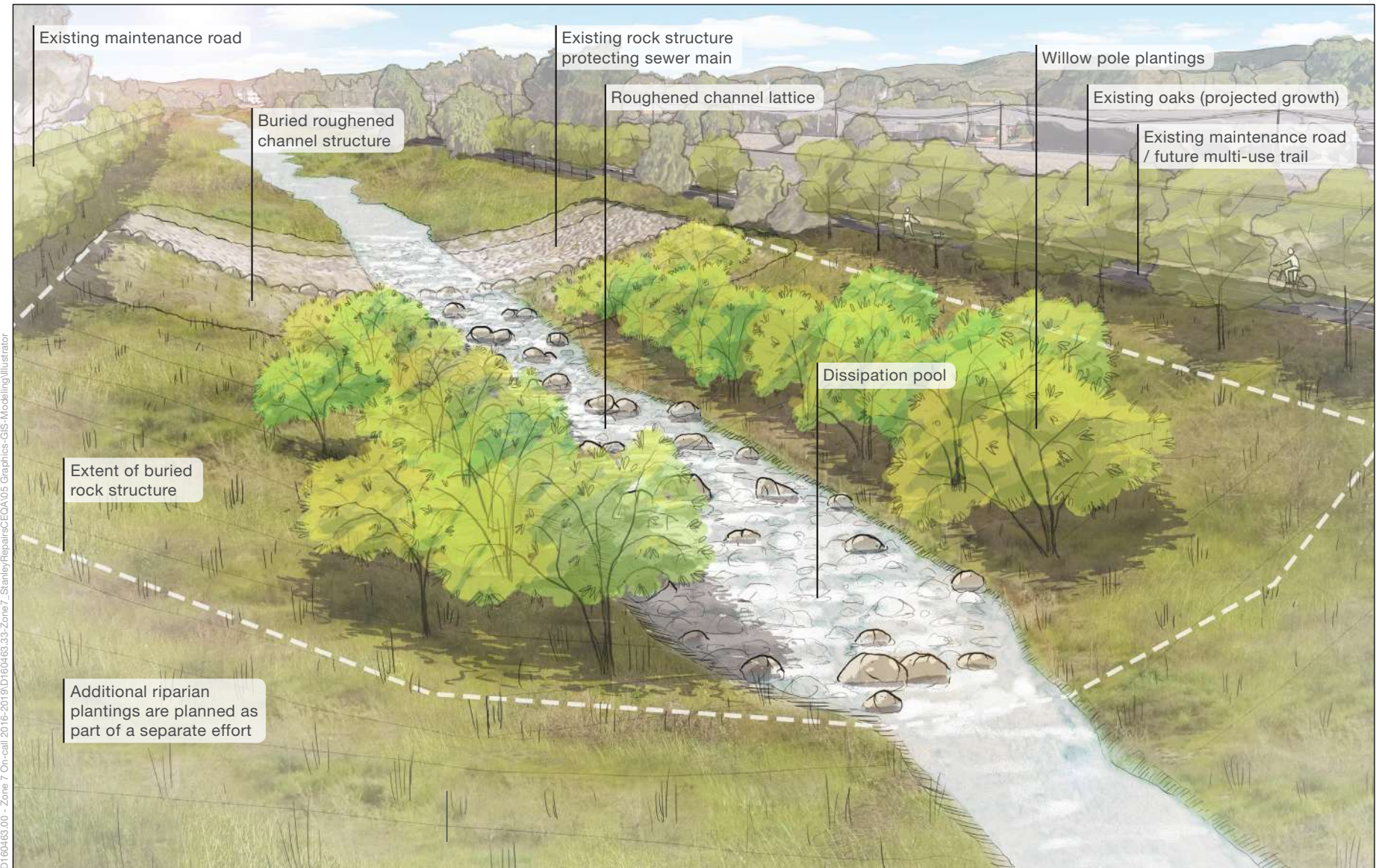


SOURCE: ESA, 2020

Zone 7 Stanley Reach Stabilization Project

Figure 2-3c
Site 3





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SOURCE: ESA, 2020

Zone 7 Stanley Reach Stabilization Project

Figure 2-4
Post-Construction Rendering



A total of approximately 3,000 cy of material would be excavated during channel grading and over-excavation for rock placement. As described above in Table 2-1, 2,450 cy of rock material would be imported to fill the site.

2.5 Project Construction

2.5.1 Construction Schedule/Sequencing

Project construction is anticipated to occur during the 2021 dry season (i.e., May 1 through October 31). However, some construction would continue into the 2022 dry season, with all work completed by October 31, 2022, if it is delayed in 2021 on account of weather conditions or other unforeseen circumstances. For the purposes of the analyses presented in Chapter 3, it is assumed that the Project (i.e., all four sites) would be constructed in a single dry season in 2021. The estimated construction schedule and equipment usage described below assumes a 6-month (130-day) work period.

The general construction sequence for each Project site is summarized in **Table 2-2** below, assuming a single Project construction season and no Project delays. Although construction activities could occur simultaneously at multiple sites, due to space constrictions, equipment availability, etc., the analysis herein assumes that the potential overlap in work would be minimal.

Construction would occur only during normal working hours, or 8 a.m. to 5 p.m., Monday through Friday, or as allowed by City of Livermore ordinance. If allowed by City ordinance, the contractor may be onsite for up to 10 hours per day throughout the construction period.

The repair work would require the use of up to 15 pieces of equipment operating full time at any given time at the Project site, and up to 12 crew members, depending on the activity and rate at which construction progresses. However, nine pieces of equipment is anticipated on-site daily at any given time. Earthmoving equipment, such as excavators and front-end loaders, would likely be used for the bulk of the grading operations and rock placement. A water truck would be onsite for daily dust control. Hand labor may be used for revegetation efforts. Material would be off-hauled using equipment such as front end loaders and 10-wheel haul trucks. A full list of construction equipment is provided below in Section 2.5.3, *Construction Equipment*.

2.5.2 Staging/Materials Delivery and Laydown

Work areas would be confined to the dried channel, adjacent maintenance roads, staging areas, and site access points from public roadways. Equipment and materials would be staged in upland areas and within access roads adjacent to Stanley Reach. The staging areas would be located on the south (left) side of the channel adjacent to Sites 1a and 3.

Trucks would haul off unused or excess materials (i.e. sand, gravel, rock) and haul in new materials for construction. The site is accessible to the east and west of the Project site, via Rockrose Street on the west and North Murrieta Boulevard on the east. See **Figure 2-5, *Haul Routes and Staging Areas***, for more details. A detailed traffic plan would be required by the City of Livermore for construction (overweight) vehicles.

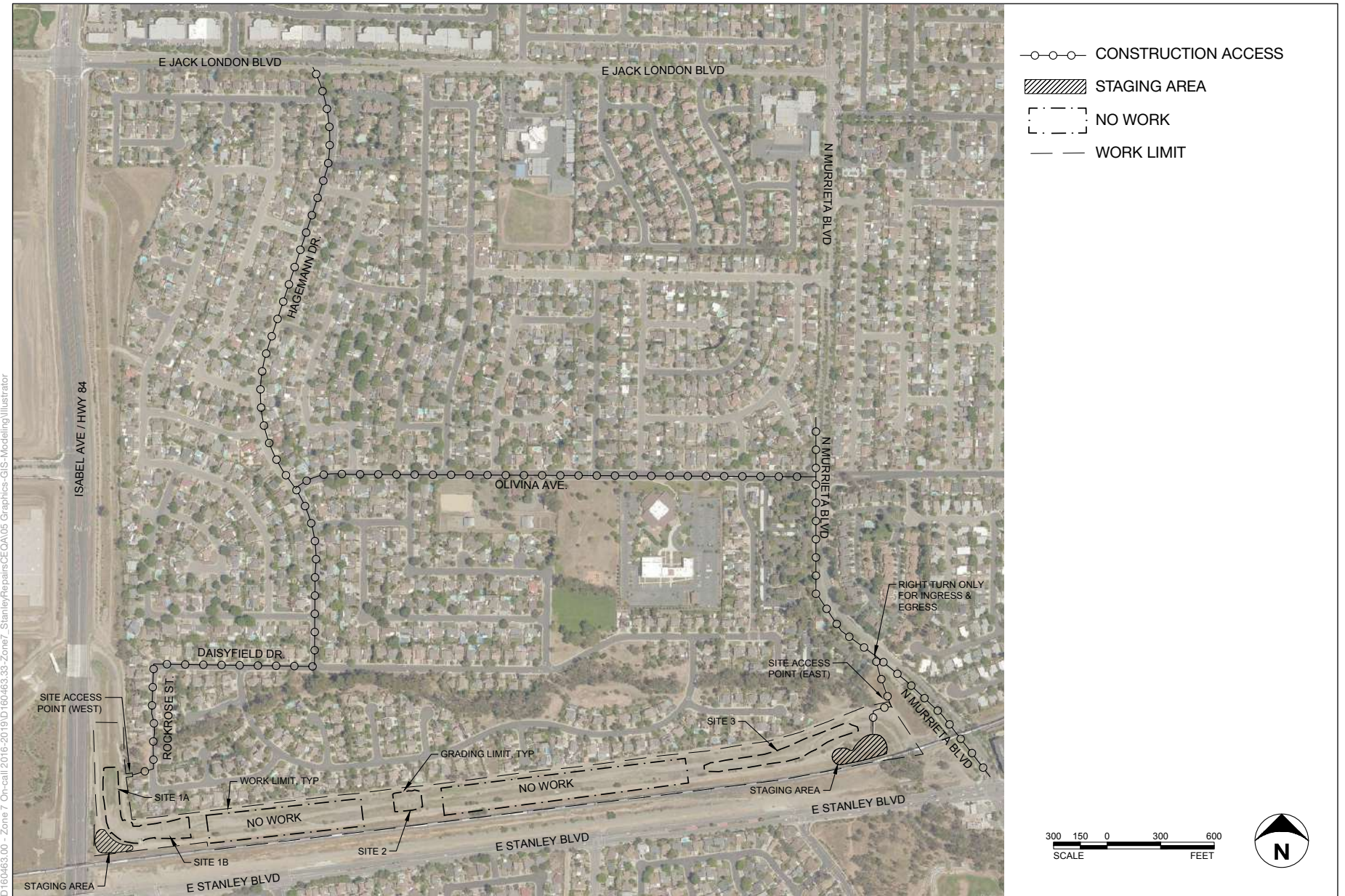
**TABLE 2-2
CONSTRUCTION SEQUENCE AND ACTIVITIES**

Sequence Number	Site Number	Project Activity/Location	Construction components	Estimated Construction Schedule^a
1 ^b	Site 1a	Sedimentation Basin	<ul style="list-style-type: none"> • Remove and dispose of accumulated sediment • Riprap repair • Import rock material 	May, 2021 (30 working days)
2	Site 1b	Downstream Roughened Channel	<ul style="list-style-type: none"> • Remove and salvage boulders along the margin of the existing roughened channel • Excavate floodplain bench and channel bank for rock placement • Import rock material • Place rock matrix articulated rock “blanket” and rock slope protection • Backfill bank and floodplain bench • Install erosion control 	May – July, 2021 (45 working days)
3	Site 2	Upstream Roughened Channel	<ul style="list-style-type: none"> • Demolish portion of concrete and grouted grade control structure • Remove and salvage boulders from footprint of existing roughened channel • Excavate floodplain bench and channel bank for rock placement • Import rock material • Place rock matrix articulated rock “blanket” and rock slope protection • Backfill bank and floodplain bench • Install erosion control 	June – September, 2021 (40 working days)
4	Site 3	Upstream Bank Repair	<ul style="list-style-type: none"> • Excavate bank toe for rock placement • Import rock material • Place rock slope protection and tubes for willows • Backfill bank with vegetated soil lifts, including willow stems and seed • Grade channel bottom • Install erosion controls and native plantings (e.g. willows and native grasses) 	September– October, 2021 (30 working days)

NOTES:

a Estimated construction schedule and dates includes a best case scenario assumption of work only occurring during normal working hours (i.e. Monday through Friday, 8 a.m. – 5 p.m.) and with no unforeseen conditions encountered and no delays. Some work at multiple sites is expected to overlap periodically, but cannot be determined with certainty until construction starts.

b Cofferdams would be implemented a week prior to the start of construction of Site 1a.



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SOURCE: ESA, 2020

Zone 7 Stanley Reach Stabilization Project

Figure 2-5
Haul Routes and Staging Areas



It is expected that as much as possible of the material (i.e. rocks, bed material) currently onsite would be salvaged and reused onsite. However, unusable material, such as demolished grouted riprap, deposited alluvium material and unusable riprap are expected to be hauled to an offsite stockpile managed by Zone 7, a local quarry for reuse, or to a local landfill such as the Vasco Road Landfill on Vasco Road in Livermore. Sediment/small gravel would be removed and re-purposed by Zone 7 within their service area for future upland repairs, like maintenance roads. See Section 2.5.4, *Haul Routes*, below for information regarding vehicle truck trips and hauling of materials.

Large rock (2 ton or larger) used to repair and restore the Stanley Reach channel would come from a source of the construction contractor's choosing. For this environmental analysis, it is assumed that the large rock would be sourced from the Lake Herman Quarry located approximately 45 miles to the northwest in Solano County near Vallejo. Haul trucks would deliver the rock via I-780 to I-680, then east on I-580 to Livermore. Once in Livermore, the rock would be either delivered directly to the staging areas at the Project site or to Zone 7's El Charro staging yard approximately 4 miles to the west for temporary storage until needed at the Project site. This environmental analysis assumes the El Charro staging yard would be used for rock staging.

2.5.3 Construction Equipment

Construction equipment would be mobilized prior to the start of construction. All material would be bought onsite using 10-wheel haul trucks having a hauling capacity of 7 or 9 cubic yards. A water truck would be onsite full-time for dust control and to water the backfill material for compaction. The limits of the work area would be flagged in order to limit the area disturbance. For the analyses presented in Chapter 3, each piece of equipment is assumed to operate 8 hours per day, although active work would likely vary day to day. Generally, nine pieces of equipment would be in operation at any given time, although this too would vary from site to site. For instance, construction at Site 1a would require one front-end loader, while two front-end loaders would be needed for construction at the other three sites. Following is a list of equipment that would be used for construction at the Project site.

- Water truck (1)
- Excavators (2)
- Front-end loader (2)
- 10-wheel trucks (5)
- Semi-trucks (4)
- Loaders (2)

In addition, four semi-trucks and an additional loader, also listed here, are anticipated for transportation and loading/unloading of large heavy rock material at the El Charro staging yard for storage, and then transported to the Project site for installation.

2.5.4 Haul Routes

Estimated earthwork calculations would require approximately 3,054 truck trips to off-haul (export) accumulated sediment, gravel, etc., not re-purposed for the Project and import of construction materials and large rock. See Section 2.5.5, *Vehicle Trips*, for details. Haul truck trips would not occur consistently each day during construction; it is possible there would be several truck trips on some days and none on other days. As noted above in Section 2.5.2, *Staging/Materials Delivery and Laydown*, haul trucks would deliver rock materials to the Project site or El Charro staging yard, assumed to be Lake Herman Quarry from a quarry near Vallejo, traveling to Livermore by way of I-780, I-680, and I-580. Trucks would also haul sediment excavated from the channel to the Chain-of-Lakes stockpiling area, approximately 7 miles west of the Project site. The analysis presented in Chapter 3 assumes the large rock material would be hauled from the El Charro staging yard located approximately four miles west of the Project site.

Steel plates may be placed on the road in order to reduce the vibration to the adjacent neighbors from dumping rock. Whenever possible, construction traffic trips to and from the Project site would occur 8:00 a.m. to 5:00 p.m. on weekdays to avoid peak commuting hours. The main haul access routes used for the duration of the Project would include portions of the following local streets: Rockrose Street, Daisyfield Drive, Hagemann Drive, Olivina Avenue, and North Murrieta Boulevard. These local streets would be accessed from Isabel Avenue/Highway 84, East Jack London Boulevard, and Stanley Boulevard. The City of Livermore's Engineer indicated that there would be ingress and egress limitations, which include a "right-hand" turn only, as follows:

To access the north side of channel:

IN: East Jack London Boulevard – Hagemann Drive – Daisyfield Drive - Rockrose Street
 OUT: North Murrieta Boulevard – Stanley Boulevard

To access the south side of channel:

IN: East Jack London Boulevard – North Murrieta Boulevard
 OUT: North Murrieta Boulevard – Stanley Boulevard

See Figure 2-5, for more details regarding haul routes.

2.5.5 Vehicle Trips

Earthwork calculations prepared for the Project design indicate that a total of 17,100 cubic yards (cy) of gravels would be excavated and off-hauled and that approximately 9,080 cubic yards of rock material would be imported and placed for the Project. Hauling the existing unused sediment and gravel materials off-site would require approximately 1,900 truck trips (estimated); the import of rock material would require approximately 1,154 truck trips. Of the estimated 1,154 rock material truck trips, 505 truck trips for the rock materials that are 1 ton or smaller would be hauled by 9 cy trucks and 649 truck trips for the rock materials that are 2 ton or larger would be hauled by 7 cy trucks. With a six-month construction window, the off-haul and import would require an average of approximately 24 truck trips per day. However, as discussed above in Section 2.5.4, *Haul Routes*, truck trips would most likely not occur consistently each day during construction. The off-haul and import activities would be a substantial, but feasible, effort that

would require attentive and efficient construction management, as well as an early bid process to support maximization of the full construction window.

2.5.6 Dewatering

In the summer months, the water in Arroyo Mocho and Stanley Reach typically consists of artificial recharge of the groundwater basin from the South Bay Aqueduct – when it is available from the Department of Water Resources (DWR). In the summer when DWR water is available, flows are released from upstream turn-outs to facilitate groundwater recharge through the gravel bed channels, including Arroyo Mocho. Depending on groundwater recharge needs, up to about 15 cubic feet per second (cfs) could be released and would flow through the Stanley Reach. During periods of flow, dewatering may be required to ensure work is conducted outside of the wetted channel. Zone 7 does not request releases to Arroyo Mocho from DWR if recharge is not needed (e.g., if groundwater basin is full).

Prior to the start of construction, two cofferdams would be temporarily installed at the upstream and downstream edge of the active Project construction area. Two cofferdams were previously authorized under USACE File No. 2013-00078S on July 19, 2019, but did not include Site 3 and would need to be updated prior to authorization. The downstream cofferdam would be installed immediately downstream of Site 1a, as originally planned. The upstream dam would be relocated from its original location upstream of Site 2 to upstream of Site 3. See Figures 2-3a and 2-3b for cofferdam locations. Flow would be diverted around the work area via the low flow historic Arroyo Mocho channel that circumvents Stanley Reach to the north to create a temporary dry work zone within the Project work area. The cofferdams would be constructed from sandbags and plastic sheeting. The estimated temporary fill associated with the relocated upstream cofferdams is shown in **Table 2-3**. This same cofferdam arrangement was employed successfully in 2013.

**TABLE 2-3
TEMPORARY COFFERDAM FILL INFORMATION BY SITE**

Site No.	Fill – Sandbag or Other Material Volume (cubic yards)
Downstream of Site 1a	50
Upstream of Site 3	50
Total	100

2.5.7 Excavation and Fill Information

The Project would require excavation, or dredging, of a sedimentation basin, excavation and permanent placement of fill to repair the failed roughened channel and bank elements, and the temporary placement of fill to construct cofferdams at select locations. This Project activity would affect waters and wetlands of the United States and State, triggering the need for compliance with Sections 401 and 404 of the federal Clean Water Act and Section 1600, et seq., of the California Fish and Game Code. The dredge and fill requirements for the Project, as well as the compliance requirements, are discussed in greater detail in Section 3.2.4, *Biological Resources*, under Question c.

2.6 Project Operations and Maintenance

Upon completion of Project construction, the repair and restoration sites would require minimal maintenance. It is anticipated that no new staff would be required specifically for operations or perform routine maintenance at the repair and restoration sites. Maintenance is dependent on seasonal needs, but for the purposes of the following analyses, it is anticipated to occur up to 8 days per month. Primary maintenance activities would include watering and weeding in order to maintain plant establishment. Major repair activities would be episodic and occur only as needed; these activities cannot be reliably anticipated or scheduled at this time. Therefore, additional truck trips resulting from maintenance of repair and restoration sites in Stanley Reach would be minimal. No waste or discharge would be generated at these sites or within Stanley Reach as a whole, unless resulting from an unanticipated major repair.

Project monitoring for permit compliance would occur annually according to permit conditions. The elements monitored could include plant coverage and survival success, geomorphic channel stability, and changes to the channel topography over time.

2.7 References

- Environmental Science Associates (ESA), 2020. Arroyo Mocho Stanley Reach Stabilization Design – Draft Bid Set, Alameda County Flood Control & Water Conservation District Zone 7. December, 6, 2019.
- ESA, 2020. USACE Nationwide Permit Pre-Construction Notification and Supporting Documents for the Arroyo Mocho Stanley Reach Stabilization Project: Site 3. April 2020.
- ESA, 2020. Alameda County Flood Control and Water Conservation District, Zone 7 Arroyo Mocho Stanley Reach Stabilization Project, Amended Clean Water Act Section 401 Water Quality Certification Application and Supporting Documents. April 2020.
- ESA, 2020. Alameda County Flood Control and Water Conservation District, Zone 7 Arroyo Mocho Stanley Reach Stabilization Project, Lake and Streambed Alteration Agreement Notification and Supporting Documents. April 2020.

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CHAPTER 3

Environmental Checklist - Initial Study

1. **Project Title:** Stanley Reach Stabilization Project

2. **Lead Agency Name and Address:** Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551

3. **Contact Person and Phone Number:** Elke Rank, Zone 7 Water Agency
(925) 454-5005

4. **Project Location:** City of Livermore, Alameda County

5. **Project Sponsor's Name and Address:** Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551

6. **General Plan Designation(s):** Open Space (OSP)

7. **Zoning:** Planned Development (PD)

8. **Description of Project:**

The Stanley Reach Stabilization Project (Project), proposed by Zone 7 (Lead Agency), intends to repair and stabilize a 1,670-linear foot section of the Arroyo Mocho Stanley Reach channel bank located along the floor of the Livermore-Amador Valley in Alameda County. The Project would consist of four designated work areas and are described in more detail in Chapter 2, *Project Description*.

9. **Surrounding Land Uses and Setting.** (Briefly describe the project's surroundings.)

The Project is predominantly surrounded by residential neighborhoods and lies directly north and parallel with the railroad and Stanley Boulevard. Isabel Avenue and North Murrieta Boulevard bookend the Project to the west and east, respectively. The historic, low flow Arroyo Mocho channel flows naturally through the residential neighborhood located directly north of the Project site, see Figure 2-2, *Project Location* for details.

10. **Other public agencies whose approval is required** (e.g., permits, financing approval, or participation agreement.)

- United States Army Corps of Engineers
 - Federal Clean Water Act Section 404, Nationwide Permits 33 and 43

- California Department of Fish and Wildlife
 - Lake and Streambed Alteration Agreement Section 1602
- San Francisco Bay Regional Water Quality Control Board
 - Federal Clean Water Act Section 401 Water Quality Certification
 - General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No., as amended by Order No. 2009-0009 DWQ) under the National Pollutant Discharge Elimination System (NPDES)

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

On January 16, 2019, Environmental Science Associates (ESA) requested a record search and list of Native American individuals and organization that may have knowledge of cultural resources in or near the Project area from the Native American Heritage Commission (NAHC). Although the record search of the NAHC Sacred Lands File results was negative, all tribes listed by the NAHC were contacted on March 20, 2019. See Section 3.2.18, *Tribal Cultural Resources*, for more details.

3.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- | | | |
|--|--|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input checked="" type="checkbox"/> Geology/Soils | <input checked="" type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards & Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input checked="" type="checkbox"/> Wildfire | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study:

- 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.

Elke Rank
Zone 7 Integrated Planning

Date

3.2 Environmental Checklist

3.2.1 Aesthetics

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
I. AESTHETICS — Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a, b) **No Impact.** According to the City of Livermore General Plan, the Project site does not contain any nearby designated scenic vistas or scenic resources (City of Livermore, 2009). The closest designated State scenic highway to the Project site is Interstate 580, located approximately 3 miles north of the Project (Caltrans, 2017). Interstate 580 traverses the northern portion of the City of Livermore traveling from Dublin to Tracy and is not in view of the Project site. The Project would not result in any substantial damage to trees, outcroppings, and/or historic building visible from Interstate 580. Therefore, the Project would not create a substantial adverse effect on a scenic vista, scenic resource, or historic building within a scenic highway. Under this criterion, there would be no impact.
- c) **Less than Significant Impact.** The Project site is surrounded by industrial and residential development and located in an urbanized area. Several neighborhood and communities are located directly adjacent to the north and south of Stanley Reach. Vegetative enhancement of the Arroyo Mocho would remain consistent with all community character, land use, and conservation elements described in the General Plan, including applicable Open Space designation and Planned Development zoning (City of Livermore, 2013). The Project would require channel stabilization, enhancement measures, and riparian restoration of the existing Stanley Reach and would not involve any additional Project components that would alter or disrupt the existing viewscape or create a strong visual contrast. Following construction, the Project would appear similar to the existing channel and would not obstruct or alter any nearby scenic resources further from existing conditions. Furthermore, operation and maintenance of the Project would

include vegetation enhancements in the riparian corridor and is anticipated to improve the overall appearance of the Project site. The impact to the area's visual character and quality would be less than significant.

- d) **No Impact.** The Project would involve the removal and replacement of natural substrate and construction activities would occur during daytime hours. Nighttime maintenance would not occur, unless in response to a real-time emergency which cannot be reliably predicted for this analysis. Therefore, the Project would not include any new sources of substantial light or glare during construction, operation, or maintenance. Under this criterion, there would be no impact.

Mitigation Measures

No mitigation measures are required.

References

Caltrans, 2017. California State Scenic Highways. Available online: <https://www.arcgis.com/home/item.html?id=f0259b1ad0fe4093a5604c9b838a486a>.

City of Livermore, 2009. City of Livermore General Plan, Community Character. Available online: <http://www.cityoflivermore.net/civicax/filebank/documents/6094>.

City of Livermore, 2013. City of Livermore General Plan, Land Use Element. Available online: <http://www.cityoflivermore.net/civicax/filebank/documents/6093>.

3.2.2 Agriculture and Forestry Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
II. AGRICULTURE AND FORESTRY RESOURCES —				
<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) **No Impact.** The Project would be constructed in the Arroyo Mocho Stanley Reach channel in the developed area of the City of Livermore, surrounded by railroad, industrial, and residential land uses. By definition, the Project site is classified as Urban and Built-Up Land¹ according to the Farmland Mapping and Monitoring Program and would not sustain farmland (DOC, 2016). All project components and staging areas would not occur on Prime, Unique, or Statewide Importance Farmland, therefore, no conversion of designated farmland would occur and there would be no impact.
- b) **No Impact.** The Project would not be located in or near any land used or zoned for agricultural use. The Project is currently designated as Open Space (OSP) and zoned as Planned Development (PD) (City of Livermore, 2013). Areas adjacent to the Project are designated as Urban Medium Residential (UM) and Urban High Residential (UH) and zoned as Low Density Residential (RL) (City of Livermore, 2018; City of Livermore, 2017). For more details, see the Land Use and Planning section below. Since the Project is

¹ Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes (DOC, 2019).

not located on or near designated agricultural land, the Project would not conflict with a Williamson Act contract or use of agriculturally zoned parcels: there would be no impact.

- c, d) **No Impact.** The Project site is surrounded by industrial and residential lands and contains sparse tree cover on the outer edges of the channel. The Project site does not support substantial tree cover and is not zoned as forest land or timberland, as defined by Public Resources Code §12220(g)², §4526³, or Government Code §51104(g)⁴. Therefore, there would be no loss of forest land or conversion of forest land to non-forest use. There would be no impact.
- e) **No Impact.** As discussed above, the Project site and the surrounding areas would not be designated or zoned for any type of farmland or forestland. Therefore, the Project would not involve any other changes in the existing environment due to their location or nature, which could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. The closest plot designated as farmland of importance by the DOC is located approximately 3.25 miles north of the Project site and would not be affected by any Project construction activities, truck trips, water usage, operation, or maintenance of the Project. Any potentially designated forested land would be located over 3 miles outside of Project activities (i.e. construction, operation, and maintenance). There would be no impact under this criterion.

Mitigation Measures

No mitigation measures are required.

References

Department of Conservation (DOC), 2016. California Important Farmland Finder. Available online: <https://maps.conservation.ca.gov/DLRP/CIFF/>. Accessed April 23, 2020.

DOC, 2019. Important Farmland Categories. Available online: <https://www.conservation.ca.gov/dlrp/fimmp/Pages/Important-Farmland-Categories.aspx>. Accessed April 23, 2020.

² (g) “Forest land” is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

³ “Timberland” means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis.

⁴ (g) “Timberland production zone” or “TPZ” means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h).

With respect to the general plans of cities and counties, “timberland preserve zone” means “timberland production zone.”

3.2.3 Air Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
III. AIR QUALITY —				
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

- a) **Less than Significant with Mitigation Incorporated.** The Project site is located within the San Francisco Bay Area Air Basin (SFBAAB), which is regulated by the Bay Area Air Quality Management District (BAAQMD). The SFBAAB is currently designated as a nonattainment area for the national 8-hour ozone and 24-hour fine particulate matter (PM_{2.5}) standards, as well as the state 8-hour ozone, 1-hour ozone, annual average respirable particulate matter (PM₁₀), 24-hour PM₁₀, and annual average PM_{2.5} standards (BAAQMD, 2017a). The most recently adopted air quality plan to address nonattainment issues in the SFBAAB is the 2017 Bay Area Clean Air Plan (Clean Air Plan) (BAAQMD, 2017c). The Clean Air Plan provides a regional strategy to protect public health and the climate by progressing toward attaining all state and federal air quality standards, eliminating health risk disparities from exposure to air pollution among Bay Area communities, transitioning the region to a post-carbon economy needed to achieve greenhouse gas (GHG) reduction targets for 2030 and 2050, and providing a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG reduction targets. The Clean Air Plan includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful to SFBAAB residents, such as particulate matter, ozone, and toxic air contaminants (TACs); reduce emissions of methane and other “super-GHGs”⁵ that are potent climate pollutants in the near-term; and decrease emissions of carbon dioxide by reducing fossil fuel combustion (BAAQMD, 2017c).

The BAAQMD-recommended guidance for determining if a project supports the goals of the current Clean Air Plan is to compare project-estimated emissions with BAAQMD thresholds of significance. If a project’s emissions would not exceed the thresholds of significance after the application of all feasible mitigation measures, the project would be

⁵ “Super-GHGs” are climate pollutants that have a powerful ability to contribute to global warming, such as methane, black carbon, and fluorinated gases.

consistent with the goals of the Clean Air Plan. As indicated in the following discussion with regard to air quality impact Question b, this Project would result in a potential significant impact from construction-related emissions of fugitive dust; therefore, the Project could conflict with or obstruct implementation of the Clean Air Plan and could have a significant air quality impact before mitigation. However, the Project would implement **Mitigation Measure AQ-1: Implement BAAQMD Basic Construction Mitigation Measures**, discussed under Question b below. With implementation of Mitigation Measure AQ-1, fugitive dust emissions would be reduced to a less-than-significant level, and the Project would not generate emissions related to either construction or operation that would exceed the BAAQMD mass emissions thresholds of significance for criteria air pollutants. Thus, the Project would not conflict with the goals of the Clean Air Plan.

The Clean Air Plan contains 85 control measures aimed at reducing air pollution in the SFBAAB, and Projects that incorporate all feasible air quality plan control measures are considered consistent with the Clean Air Plan. The Clean Air Plan does not include measures applicable to construction activities. Minimal operational emissions would be generated from employees traveling to the Project site up to eight times per month for routine maintenance; however, no Clean Air Plan measures would be applicable to the proposed maintenance activities. Thus, there are no specific control measures from the Clean Air Plan that would apply to construction or operation of the Project, and the Project would not conflict with implementation of Clean Air Plan control measures.

The Project would not generate emissions that would hinder the Clean Air Plan goal of achieving attainment status, and the Project would be consistent with the measures discussed in the Clean Air Plan; therefore, the Project would not conflict with or obstruct implementation of the Clean Air Plan. The impact would be less than significant with mitigation incorporated.

- b) **Less than Significant with Mitigation Incorporated.** The Federal Clean Air Act and the California Clean Air Act both require the establishment of standards for ambient concentrations of air pollutants; thus, the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) were adopted as thresholds for this analysis. The CAAQS were established by the California Air Resources Board (CARB) and are typically equal to, or more stringent than, the NAAQS established by the U.S. Environmental Protection Agency (U.S. EPA). Within the SFBAAB, the ambient air quality standards are enforced by the BAAQMD.

The SFBAAB experiences occasional violations of ozone, PM₁₀, and PM_{2.5} ambient air quality standards. Therefore, as discussed above, the Project area is currently designated as non-attainment for the national 8-hour ozone and 24-hour PM_{2.5} standards, as well as the state 8-hour ozone, 1-hour ozone, annual average PM₁₀, 24-hour PM₁₀, and annual average PM_{2.5} standards (BAAQMD, 2017a).

The BAAQMD has established thresholds of significance for air quality impacts in their California Environmental Quality Act Air Quality Guidelines (CEQA Guidelines). The CEQA Guidelines were last updated in May 2017 and were designed to assist lead agencies in determining whether a project would have a significant impact on air quality. According to the BAAQMD, a project would have a significant impact on air quality if emissions from construction or operation would exceed the thresholds of significance for reactive organic gases (ROG), nitrogen oxides (NO_x), PM₁₀, or PM_{2.5}. For construction-related emissions of fugitive dust, the BAAQMD recommends that lead agencies take a qualitative approach to determine impact significance; the CEQA Guidelines state that a project would be considered to have a less-than-significant impact with regard to fugitive dust emissions of PM₁₀ and PM_{2.5} if BAAQMD Basic Construction Mitigation Measures are implemented during construction (BAAQMD, 2017c).

Project Construction

Construction activities associated with the Project would generate emissions of ozone precursors (ROG and NO_x), as well as emissions of PM₁₀ and PM_{2.5} from use of heavy-duty construction equipment and heavy-duty dump trucks for hauling export and import materials. In addition, ROG, NO_x, PM₁₀, and PM_{2.5} would be emitted from vendor and worker vehicles traveling to and from the Project site.

Construction-related emissions of ROG, NO_x, PM₁₀, and PM_{2.5} were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. Project-specific modeling inputs included construction schedule, equipment types and amounts, number of construction workers, material hauling trips, and haul trip distance. Where Project-specific information was not available, CalEEMod defaults were used. Total emissions estimated for construction of the Project were divided by the number of construction work days to derive estimates of average daily emissions. See Appendix A for detailed modeling assumptions.

Table 3.2.3-1, below, summarizes the estimated daily emissions that would result from Project construction and compares these emissions to the BAAQMD thresholds of significance.

**TABLE 3.2.3-1
AVERAGE DAILY CONSTRUCTION-RELATED POLLUTANT EMISSIONS (PPD)**

Emissions	ROG	NO_x	PM₁₀ Exhaust	PM_{2.5} Exhaust
2021 Average Daily Emissions	1.50	23.60	0.59	0.54
BAAQMD Thresholds of Significance	54	54	82	54
<i>Exceeds Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

NOTE: BAAQMD's construction-related significance thresholds for PM₁₀ and PM_{2.5} apply to exhaust emissions only and not to fugitive dust;

ppd = pounds per day

SOURCES: Appendix A; BAAQMD, 2017c.

As shown in Table 3.2.3-1, average daily ROG, NO_x, PM₁₀ exhaust, and PM_{2.5} exhaust emissions generated during construction of the Project would be well below the BAAQMD thresholds of significance for construction-related criteria air pollutants, and the impact associated with exhaust emissions would be considered less than significant. As discussed above, construction-related fugitive dust emissions would be considered to have a significant impact on air quality if the BAAQMD Basic Construction Mitigation Measures are not implemented. Therefore, the Project would generate significant fugitive dust emissions and would be considered to have a significant impact to air quality before implementation of mitigation. The Project would implement **Mitigation Measure AQ-1: Implement BAAQMD Basic Construction Mitigation Measures** to reduce fugitive dust emissions to a less-than-significant level and to ensure that the Project would not result in adverse air quality impacts during construction.

Project Operation

Once construction is complete, operational emissions would be generated from employees traveling to the Project site to perform routine maintenance. Operation of the Project would generate a maximum of eight round trips per month from employees traveling to and from the Project site. Emissions resulting from these eight operational trips would be minimal compared to emissions that would be generated from the estimated 1,102 employee, vendor, and haul trips per month associated with construction of the Project. Emissions associated with operation of the Project are summarized in **Table 3.2.3-2**, below.

**TABLE 3.2.3-2
OPERATIONAL POLLUTANT EMISSIONS**

Emissions	ROG	NO_x	PM₁₀ Exhaust	PM_{2.5} Exhaust
Operational Emissions (ppd / tpy)	>0.01 / >0.01	0.01 / >0.01	0.01 / >0.01	>0.01 / >0.01
BAAQMD Thresholds of Significance (ppd / tpy)	54 / 10	54 / 10	82 / 15	54 / 10
<i>Exceeds Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

NOTE: ppd = pounds per day; tpy = tons per year

SOURCES: Appendix A; BAAQMD, 2017c.

As shown in Table 3.2.3-2, operational emissions associated with eight operational employee trips to the project site per month would not exceed the BAAQMD thresholds of significance. The Project's operational emissions would not have the potential to result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or State ambient air quality standard; the impact would be less than significant.

Summary

The Project would not generate criteria air pollutants during either construction or operation that would exceed the thresholds of significance. In addition, the Project would

implement Mitigation Measure AQ-1, which would ensure that BAAQMD Basic Construction Mitigation Measures are adhered to during construction. Therefore, the Project would have a less-than-significant impact with mitigation incorporated with regard to the potential for Project emissions to result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or State ambient air quality standard.

- c) **Less than Significant Impact.** The BAAQMD recommends that lead agencies assess the incremental increase in health risk to sensitive receptors within a 1,000-foot radius of the Project site that would result from TACs. According to the BAAQMD, sensitive receptors are defined as “facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses” (BAAQMD, 2017b). Short-term TAC emissions that would be generated by Project construction activities include emissions of diesel particulate matter (DPM) from use of construction equipment, as well as heavy-duty dump trucks for hauling import and export materials to and from the Project site. The nearest sensitive receptor is a residential subdivision located north of the Project site.

For construction activities, exposure of sensitive receptors to DPM represents the primary health hazard. DPM is a complex mixture of chemicals and particulate matter identified by the state as a TAC with potential cancer and chronic non-cancer effects. DPM emissions would be generated by the operation of off-road construction equipment (e.g., excavators, loaders) and on-road heavy-duty vehicles that burn diesel fuel. Although other exposure pathways exist (i.e., ingestion, dermal contact), the dominant exposure pathway for DPM associated with both cancer risk and chronic non-cancer health effects is inhalation. Consequently, this health risk assessment only evaluates the cancer and chronic non-cancer effects of DPM inhalation.

A three-step process was used to estimate cancer risks and chronic health hazards of DPM exposure. The first step involved using the CalEEMod software program to estimate average annual diesel exhaust emissions during Project construction. The second step involved using the AERMOD dispersion model to convert emissions to maximum annual DPM concentrations. The dispersion modeling used average annual DPM emissions, receptor locations, emission sources, and meteorological data collected at the Livermore Municipal Airport meteorological station, the meteorological station nearest to the Project site (approximately 1.25 miles to the north). For this Project, the following separate sources were included in the dispersion modeling:

- One polygon area source representing the on-site construction equipment within the main Project area;
- Two polygon area sources representing the on-site haul truck idling within each of the staging areas; and
- An area line source representing heavy-duty truck traffic to and from the Project site, one for accessing the north side of the channel and one for accessing the south side of the channel.

The above sources represent the worst case scenario associated with Project DPM emissions occurring at the nearest sensitive receptor. First, average emission rates from each of the above sources were separately simulated in the same model run to determine DPM concentrations. Second, in order to identify the maximum exposed individual (MEI) for the Project in AERMOD, discrete cartesian receptor points were placed to simulate the edge of the property boundaries of the surrounding receptors, including the nearest residences located in the vicinity of the Project site. The third step involved applying methods from the Office of Environmental Health Hazard Assessment's (OEHHA) Air Toxics Hot Spots Program Risk Assessment Guidelines to convert maximum concentrations to cancer risks and chronic health hazards (OEHHA, 2015).

Project Construction

Consistent with OEHAA Guidelines, a six-month exposure duration was utilized with exposure starting in the third trimester [of a pregnancy], representative of the six-month construction period. The inclusion of this lifestage applies the most conservative weighting for exposures to account for potential increased sensitivity to carcinogens from late pregnancy through childhood known as an Age Specific Factor. Since the MEI receptor was identified as a residence, the OEHHA default breathing rates and fraction of time at home for all age groups were also included.

Table 3.2.3-2 presents the health risk assessment results for the Project's construction period. The MEI receptor was identified as a resident adjacent to the north side of the Project site's eastern staging area.

**TABLE 3.2.3-2
PROJECT CONSTRUCTION HEALTH RISK ASSESSMENT RESULTS**

Parameters	Cancer Risk (per million)	PM_{2.5} (ug/m³)	Chronic HI (unitless)
Maximally Exposed Individual Receptor (Resident)	1.31	0.02	<0.01
BAAQMD Thresholds of Significance	10	0.3	1.0
<i>Exceeds Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>

SOURCES: Appendix A; BAAQMD, 2017c.

As shown in Table 3.2.3-2, risk from construction emissions of the Project would be well below the BAAQMD thresholds of significance for construction-related cancer risk, PM_{2.5} annual average concentration, and chronic non-cancer hazard index. Therefore, the Project would have a less-than-significant impact with regard to construction-related exposure of sensitive receptors to substantial pollutant concentrations.

Project Operation

As discussed above, operational emissions would be generated from employees traveling to the Project site to perform routine maintenance. Risk from operational worker trips would be less than risk from construction haul, vendor, and worker trips because construction trips would include a higher mix of diesel-fueled vehicles compared to

operational trips. TAC emissions associated with gasoline combustion have lower cancer potency factors than TAC emissions from diesel fueled vehicles or equipment, and, thus, a lower cancer risk. Additionally, emissions from the eight operational trips per month would be minimal compared to construction emissions of the Project. Operational health risk impacts from the Project would be less than construction-related impacts, and construction emissions would not exceed the BAAQMD health risk thresholds of significance. Therefore, the Project's operational emissions would not exceed the BAAQMD thresholds of significance for operational health risks, and the associated impact would be considered less than significant.

- d) **Less than Significant Impact.** According to the BAAQMD, land uses that typically generate odors include wastewater treatment plants, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing, painting/coating operations, etc. (BAAQMD 2017c). The Project does not include any land use that would typically generate any long-term sources of odor, as operational activities associated with the Project would be limited to minimal routine maintenance. Therefore, the Project would not expose sensitive receptors to adverse odors and the impact would be considered less than significant.

Mitigation Measures

Mitigation Measure AQ-1: Implement BAAQMD Basic Construction Mitigation Measures.

The following BAAQMD Basic Construction Mitigation Measures are applicable to the Project, and shall be implemented by Zone 7's construction contractor(s) to reduce emissions of fugitive dust and equipment exhaust:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day, or more if needed.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed (either manually using hand tools, or by using wet power vacuum street sweepers if deemed necessary) at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph within the Project area.
- 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 [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

- Post a publicly visible sign with the telephone number and person to contact at Zone 7 (or its designee) regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD’s phone number shall also be visible to ensure compliance with applicable regulations.

References

- Bay Area Air Quality Management District (BAAQMD), 2017a. *Air Quality Standards and Attainment Status*. Last updated January 5, 2017. Available at <https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status>. Accessed on June 9, 2020.
- Bay Area Air Quality Management District (BAAQMD), 2017b. *California Environmental Quality Act Air Quality Guidelines*. May 2017. Available at https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed June 10, 2020.
- Bay Area Air Quality Management District (BAAQMD), 2017c. *Spare the Air, Cool the Climate, Final 2017 Clean Air Plan*. Adopted April 19, 2017. Available at https://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed June 10, 2020.
- Office of Environmental Health Hazard Assessment (OEHHA), 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines*. February 2015. Available at <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>. Accessed June 16, 2020.

3.2.4 Biological Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
IV. BIOLOGICAL RESOURCES — Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a) **Less than Significant with Mitigation Incorporated.** Biological resources within the Project sites (see Figure 2-2) were identified through field reconnaissance and a wetland assessment performed on January 22 and September 20, 2019. A review of pertinent literature and database queries was also conducted for the Project site and surrounding area, including the following sources (see Appendix B):

- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) (CDFW, 2020a);
- California Native Plant Society (CNPS) rare plant online inventory (CNPS, 2020);
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) environmental conservation online system (USFWS, 2020).

The Project sites include disturbed and developed habitat along the levees, non-native grassland on the slopes, and scattered wetlands along the edges of the channel, Stanley Reach of Arroyo Mocho. The area is adjacent to active railroad tracks, roads, and residential development, but the channel itself contains habitat for plants and wildlife.

Stanley Reach is located within the geographic range of a number of listed and special-status species (CDFW, 2020a), which have potential to occur the local Project vicinity. A discussion of potential impacts to special-status species is provided below.

Wildlife

The California red-legged frog (federally-listed threatened [FT] and California Species of Special Concern [SSC]), California tiger salamander (*Ambystoma californiense*) (FT and state-listed threatened [ST]), and western pond turtle (*Actinemys marmorata*) (SSC) are known to occur in the local Project vicinity. California red-legged frog is documented 1.5 miles north, but residential and industrial development between this documented population and the sites represents a movement barrier. In addition, instream and upland habitat conditions for this species in the Project area are poor and past surveys for this species were negative (ESA, 2006). However, California red-legged frogs are present upstream and, thus, have potential to occur within the channel. The nearest documented California tiger salamander occurrences are reported 1.3 miles north and 1.5 miles to the southwest. The minimal amount of instream vegetation and constant flows reduce the suitability of habitat for this species and the presence of development surrounding the Project sites isolates them from known populations. In addition, upland habitat lacks suitable burrows or other potential aestivation sites. Thus, California tiger salamanders are not expected to occur. Finally, Western pond turtle adults may be found basking or swimming in the channel, but breeding habitat is not present.

In the unlikely event that a California red-legged frog or western pond turtle is present at the time of construction, an individual adult may be injured, harassed, or killed due to proposed activities during the removal of instream structures or restoration of the streambed or banks, or from vehicular use of roads. In addition, frogs or turtles moving away from the disturbance may be driven into the open where they are more susceptible to injury or mortality due to predation, vehicular or foot traffic, or other activities. Because no breeding habitat is available on-site and upland aestivation habitat is largely absent, the noise and ground vibrations expected from the use of heavy equipment during construction are unlikely to harass breeding western pond turtles or California red-legged frogs or affect reproductive activity or viability. Potential significant impacts to California red-legged frog and western pond turtle would be reduced to a less-than-significant level with implementation of **Mitigation Measure BIO-1: Preconstruction Surveys and Worker Training**.

Bird species, including special-status species, may use the ruderal grassland, disturbed areas, shrubs and trees for nesting habitat in or in the vicinity of the work area, including white-tailed kite (*Elanus leucurus*) (fully protected [FP]) and Alameda song sparrow (*Melospiza melodia pusillula*) (SSC). Other migratory birds which may nest in the Project sites include mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), western scrub jay (*Aphelocoma californica*), and house finch (*Haemorhous mexicanus*). Actively nesting migratory birds are protected under the Migratory Bird Treaty Act and California Fish and Game Code (FGC), and "take" would constitute a significant impact. The implementation of **Mitigation Measure BIO-2: Pre-Construction**

Bird Surveys, would reduce potential impacts on nesting special-status and migratory birds to a less-than significant level.

There is no bat roosting habitat in the work area; therefore, bats would not be impacted by construction activities.

Plants

Neither the developed/disturbed areas, nor the ruderal grasslands in the work areas, would provide suitable habitat for special-status plant species that are known from the local vicinity. Due to the high level of disturbance and predominance of non-native plant species, special-status plants are considered absent from the site, and no impacts are anticipated.

- b) **No Impact.** Natural communities present at the Project sites include:

Grassland: Non-native grassland occurs on the side slopes between the access maintenance roads and the Stanley Reach channel. The grassland is dominated by common non-native grass species such as slender oat (*Avena fatua*), Italian ryegrass, soft brome (*Bromus hordeaceus*), and Bermuda grass (*Cynodon dactylon*) with wild and crane’s bill geranium (*Geranium dissectum*, *G. molle*). Black mustard (*Brassica nigra*), poison hemlock, milk thistle (*Silybum marianum*) and bristly ox-tongue (*Helminthotheca echioides*) also occur within the grassland to a lesser extent at lower elevations on the slopes. Native blue wildrye (*Elymus glaucus*) and slender willow herb (*Epilobium ciliatum*) are also sparsely present on upland slopes.

A number of common wildlife species may use the Project site grassland for refugia, nesting, or foraging habitat such as western fence lizard (*Sceloporus occidentalis*), song sparrow, western scrub jay (*Aphelocoma californica*), black phoebe (*Sayornis nigricans*), house finch, yellow-rumped warbler (*Setophaga coronata*), mourning dove, and raccoon (*Procyon lotor*).

Developed/Disturbed: Outside the channel are maintenance roads consisting mainly of gravel and unvegetated, compacted soil. Planted native trees and shrubs, such as coast live oak (*Quercus agrifolia*), valley oak (*Q. lobata*), California buckwheat (*Eriogonum fasciculatum* var. *foliolosum*), and California sage (*Artemisia californica*) line portions of the access maintenance roads above the channel.

No riparian or sensitive upland natural communities are located within the Project sites or staging areas. The channel is a water of the U.S. and has fringing wetlands which are also potentially jurisdictional. Wetlands and waters are discussed below under Question c. There would be no impact under this criterion.

- c) **Less than Significant with Mitigation Incorporated.** ESA conducted formal wetland delineations of the work areas on January 22, 2019 and September 20, 2019 (ESA, 2019a and b). The field delineation identified and documented wetlands and other waters of the U.S. within the delineation study areas, all of which would potentially be considered

jurisdictional by the USACE and would, therefore, be regulated under Section 404 and Section 401 of the Clean Water Act. For Sites 1a, 1b, and 2, a total of 1.81 acres (78,865.9 square feet) and 2,006.6 linear feet of potentially jurisdictional waters of the U.S. occur within the delineation study area, which includes the work area and a buffer. This total area includes the following breakdown by type: 0.167 acre (7,266 square feet) of instream wetlands and 1.64 acres (71,600 square feet) of perennial streams (ESA, 2019b). For site 3, a total of 1.85 acres and 1,188 linear feet of aquatic resources were mapped within the delineation study area, all of which are likely to be considered waters of the U.S. These include 0.72 acre of instream wetland and 1.13 acres (1,188 linear feet) of intermittent streams (ESA, 2020b).

The Project would result in permanent placement of fill below and above the ordinary high water mark (OHWM) of these wetlands. **Table 3.2.4-1** identifies the potential Project impacts on jurisdictional wetlands and other waters by Project component.

**TABLE 3.2.4-1
PROJECT IMPACTS ON WATERS OF THE U.S. AND WATERS OF THE STATE**

Site No.	Waters of the U.S.			Waters of the State		
	Impact to Instream Wetlands (acre)	Impact to Other Waters (acre)	Total Impact to Waters (acre)	Impact area above OHWM (acre)	Total Project Impact area (acre)	Linear Feet of Channel
1a	0.00	0.77	0.77	0.09	0.86	510
1b	0.01	0.16	0.17	0.22	0.39	300
2	0.00	0.12	0.12	0.28	0.44	160
3	0.48	0.74	1.18	0.15	1.33	700
Total	0.49	1.79	2.28	0.74	3.02	1,670

The Project would temporarily impact approximately 0.49-acre of instream wetlands, interspersed between the 300 linear feet of Stanley Reach for the Site 1b repair and the 700 linear feet of Site 3. Temporary impacts on approximately 1.79 acres below the OHWM would occur from the excavation of approximately 10,515 cubic yards of deposited alluvium at Sites 1a, 1b, 2 and 3. Approximately 8,480 cubic yards of rock rip rap would be placed to repair two roughened channel segments at Sites 1a and 2 and bank repair at Site 3. Dewatering would occur when necessary with placement of cofferdams for the duration of construction. Impacts on potential wetlands and waters of the U.S. or State would be significant. Implementation of **Mitigation Measure BIO-3: Avoid, Minimize and Mitigate for Impacts to Wetlands and Waters**, provided below, would reduce these impacts to a less than significant level.

- d) **Less than Significant Impact.** The four sites occur along Stanley Reach, a constructed flood control channel, which serves as a corridor for wildlife moving in an east-west direction in Livermore. These movements would be impeded for a limited time during construction; following construction, wildlife could continue accessing the channel and surrounding vegetation for east-west movement. To the north, the site is bordered by

- roads and dense residential and commercial development and, to the south, active railroad and roads, which are barriers to wildlife movement. The Project would also not impede the use of wildlife nursery sites, as the site does not provide valuable nursery habitat for any species. Because of the existing barriers to north and south, and the limited duration of impact on wildlife corridor use in an east-west direction, the Project's impact on wildlife corridors would be less than significant.
- e) **No Impact.** The Project would be located in ruderal grassland and in the developed portion and ruderal grasslands area of the staging areas. Prior to the onset of construction, Zone 7 would remove existing landscaping trees and shrubs that are in the path and vicinity of construction. In the case that trees need to be removed as part of this Project, the Project would adhere to the Alameda County Tree Ordinance (Alameda County, 2016). No other local policies or ordinances protect biological resources that could be affected by construction or operation of the Project. Thus, there would be no impact under this criterion.
- f) **No Impact.** The work areas are not within an area subject to any Habitat Conservation Plan adopted pursuant to the federal Endangered Species Act, or any Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan (CDFW, 2020b); therefore, there would be no impact under this criterion.

Mitigation Measures

Mitigation Measure BIO-1: Preconstruction Surveys and Worker Training.

Zone 7 shall implement measures to avoid and minimize potential adverse effects on California red-legged frog and western pond turtle. Prior to conducting work and during work, the following measures shall be implemented.

1. Instream disturbances shall be performed during the dry season when flows cease in the Project area (e.g., May 1 to October 31). Additionally, upstream water releases shall be reduced during the construction period to minimize the likelihood of animal movement through the Project area during construction.
2. A qualified biologist shall perform a preconstruction survey of the Project area prior to construction to verify that California red-legged frogs and western pond turtles are not present in work areas. General minimum qualifications for the qualified biologist are a 4-year degree in biological sciences or other appropriate training and/or experience in surveying, identifying, and handling California red-legged frogs and western pond turtles.
3. In the event that standing water is present in the sediment basin at the time of construction, a qualified biological monitor shall perform periodic inspections of the project site to verify the absence of California red-legged frogs and western pond turtles.
4. A biological resource education program shall be provided for construction crews and contractors before construction activities begin. The program shall describe the life history and identification of the California red-legged frog and western pond turtle, protective measures to be implemented if sensitive species are identified or

suspected to be in the work area (i.e., immediate notification of the biological monitor, and temporary protective buffers), and penalties for handling or harming these species.

5. If a California red-legged frog or western pond turtle is located, work shall be ceased in the immediate area and the U.S. Fish and Wildlife Service or California Department of Fish and Wildlife shall be notified before work is reinitiated.
6. During work, all trash that may attract predators shall be properly contained, removed from the work area, and disposed of regularly. Zone 7 or its contractor shall remove all trash and construction debris from work area on a daily basis.

Mitigation Measure BIO-2: Pre-Construction Bird Surveys.

If construction or vegetation removal must be performed during the nesting period (February 1 through August 31), a qualified biologist shall survey the work area to verify the presence or absence of nests no more than 7 days prior to the start of construction activities, including the clearance of vegetation. If no nests are found and the site is cleared of vegetation, no further survey will be required. If active nests are observed, the construction contractor, in consultation with a qualified biologist, shall establish buffer zones around nest areas. Typical nest buffers are 100 feet for passerine birds, depending upon the nature of proposed activities and the sensitivity of the identified bird to disturbance, and 150 to 250 feet for raptors. Construction activities shall be avoided or modified within the buffer area until young birds have fledged, which shall be confirmed by the qualified biologist. Buffer sizes may be reduced from the initially established distances following review by the qualified biologist and/or coordination with California Department of Fish and Wildlife.

Mitigation Measure BIO-3: Avoid, Minimize and Mitigate for Impacts to Wetlands and Waters.

During construction, certified weed-free permanent and temporary erosion control measures (e.g., fabric wattles) shall be implemented to minimize erosion and sedimentation into waters during and after construction. Reconstruction of rock slope protection with rip rap at Site 3 shall include tubes for placement of willows. Revegetation of temporarily impacted areas shall include willows, native grasses, and other native plant species.

In addition, Zone 7 shall obtain and comply with necessary conditions for permits for wetland impacts from the USACE, CDFW, and the Regional Water Quality Control Board. The permits shall specify the amount of wetland to be impacted and include conditions for construction and restoration. Zone 7 shall comply with all permit conditions for temporary and permanent wetland impacts, including mitigation at 1:1 or other approved ratio.

References

Alameda County, 2016, Revised Tree Ordinance O-2016-66. https://library.municode.com/ca/alameda_county/codes/code_of_ordinances?nodeId=TIT12PUROPA_CH12.11RETRCOR I-W

California Department of Fish and Wildlife (CDFW), 2020a. California Natural Diversity Database (CNDDDB). <https://map.dfg.ca.gov/rarefind/view/RareFind.aspx#>

CDFW, 2020b. Conservation Plan Boundaries, HCP and NCCP. <https://www.wildlife.ca.gov/conservation/planning/nccp/plans>

California Native Plant Society (CNPS), 2020. Rare Plant Rank: Plant List. <http://www.rareplants.cnps.org/>

ESA, 2006. Alameda County Flood Control and Water Conservation district – Zone 7 Water Agency 2006 Maintenance Projects, California Red-legged Frog Protocol-level Survey Report. Prepared for the Zone 7 Water Agency, May 2006.

ESA, 2019a. Aquatic Resources Delineation Report for Arroyo Mocho Stanley Reach Stabilization Project. January (Sites 1 and 2).

ESA, 2019b. Aquatic Resources Delineation Report for Arroyo Mocho Stanley Reach Stabilization Project. October (Site 3).

United States Fish and Wildlife Service (USFWS), 2020. Information for Planning and Consultation (IPaC) environmental conservation online system. <https://ecos.fws.gov/ipac/>

3.2.5 Cultural Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
V. CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

- a) **No Impact.** A significant impact would occur if the Project would cause a substantial adverse change to a historical resource, herein referring to historic-era architectural resources or the built environment, including buildings, structures, and objects. A significant impact includes physical demolition, destruction, relocation, or alteration of a historical resource.

There are no architectural resources in the Project area that could be considered historical resources, as defined by Section 15064.5 of the CEQA Guidelines. One historic-period structure has been previously recorded adjacent to the Project site: Arroyo Mocho Canal (P-01-001776). The canal is an engineered flood control channel currently designated by Zone 7 as Line G that has been determined not eligible for listing in the National Register of Historic Places or California Register of Historical Resources (OHP, 2019a). The Project site is within the engineered flood control “bypass” channel of the Arroyo Mocho Canal, the Stanley Reach channel, that was constructed in 1990 in order to accommodate the adjacent residential development. The channel was modified by Caltrans in 2000 to allow for widening of Highway 84 (Isabel Avenue). In July 2019, the California State Historic Preservation Officer concurred with the finding that the Project would not cause an impact to historic properties, including archaeological resources (OHP, 2019b).

As there are no historical resources in the Project area, the Project would have no impact on historical resources and no mitigation is required.

- b) **Less than Significant with Mitigation Incorporated.** Archaeological resources can be considered historical resources, according to Section 15064.5 of the CEQA Guidelines, as well as unique archaeological resources, as defined in PRC Section 21083.2(g). A significant impact could occur if the Project would cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

ESA staff has completed several records searches for Zone 7 bank stabilization projects that included the Project site and a ½-mile radius around the Project site. Records

searches have been conducted at the Northwest Information Center (NWIC) of the California Historical Resources Information System on March 1, 2016 (File No. 15-1254), April 11, 2016 (File No. 15-1475), July 6, 2017 (File No. 17-0012), October 30, 2017 (File No. 17-1271), and, specifically for the Project, on January 15, 2019 (File No. 18-1302). The purpose of the records searches is to (1) determine whether known cultural resources have been recorded within or adjacent to the Project; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and preliminary evaluation of cultural resources. Records were also reviewed in the Built Environment Resource Directory for Alameda County, which contains information on places of recognized historical significance, including those evaluated for listing in the *National Register of Historic Places*, the *California Register of Historical Resources*, the *California Inventory of Historical Resources*, *California Historical Landmarks*, and *California Points of Historical Interest*.

Several cultural resources investigations have been completed in the vicinity of the Project. There have been no cultural resources studies completed in the Project site. Results of the records search indicate that no prehistoric or historic-period archaeological resources have been identified or recorded within the Project site or within 0.5 mile.

ESA completed a field survey of the Project site on January 17, 2019. The surveyed areas were all heavily disturbed. Vegetation consisted of grasses, sparse shrubs, and small trees. Ground visibility was approximately 40 percent. No cultural materials or other evidence of past human use or occupation were observed. In July 2019, the California State Historic Preservation Officer concurred with the finding that the Project would not cause an impact to historic properties, including archaeological resources (OHP, 2019b).

Based on the survey results, nearby site distribution, previous disturbance, and environmental context, the Project site has a low potential to uncover archaeological resources. Despite the low potential, the discovery of archaeological materials during ground-disturbing activities cannot be entirely discounted. The inadvertent discovery of archaeological resources during Project implementation could be a potentially significant impact. This impact would be reduced to a less-than-significant level with implementation of **Mitigation Measure CUL-1: Inadvertent Discovery of Cultural Resources**, which requires avoidance measures or the appropriate treatment of archaeological resources if discovered during Project implementation.

- c) **Less than Significant with Mitigation Incorporated.** There is no indication from the archival research that any part of the Project site has been used for human burial purposes in the recent or distant past. Therefore, it is unlikely that human remains would be encountered during construction of the Project. Despite the low potential, the possibility of inadvertent discovery cannot be entirely discounted and would result in a potentially significant impact. This impact would be reduced to a less than significant level with implementation of **Mitigation Measure CUL-2: Inadvertent Discovery of Human**

Remains, which requires avoidance measures or the appropriate treatment of human remains if accidentally discovered during construction.

Mitigation Measures

Mitigation Measure CUL-1: Inadvertent Discovery of Cultural Resources.

If prehistoric or historic-era archaeological resources are encountered, all construction activities within 100 feet shall halt. The Zone 7 Water Agency shall be notified. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include deposits of metal, glass, and/or ceramic refuse. A Secretary of the Interior-qualified archaeologist shall inspect the findings within 24 hours of discovery. If it is determined that the Project could damage a significant archaeological resource, the Zone 7 Water Agency shall adjust the Project design to avoid any adverse effects. If avoidance is not feasible, a qualified archaeologist shall prepare and implement a detailed Archaeological Resources Management Plan in consultation with the State Historic Preservation Officer, the Zone 7 Water Agency, and, for prehistoric resources, the appropriate Native American representative to resolve potential adverse effects to historic properties, including significant archaeological resources.

Mitigation Measure CUL-2: Inadvertent Discovery of Human Remains.

In the event of discovery of any human remains during Project implementation, such activities within 100 feet of the find shall cease until the Alameda County Coroner has been contacted to determine that no investigation of the cause of death is required. The Native American Heritage Commission shall be contacted within 24 hours if it is determined that the remains are Native American. The Commission shall then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn shall make recommendations to the Zone 7 Water Agency for the appropriate means of treating the human remains and any grave goods.

References

Northwest Information Center (NWIC), Records Search File No. 18-1302. On file, ESA, January 15, 2019.

Office of Historic Preservation (OHP), Section 106 Consultation for the proposed Zone 7 Water Agency Repair of 26 Bank Failures in Dublin and Pleasanton, Alameda County, California (Corps File Number 2018-00434S). March 19, 2019a.

OHP, Section 106 Consultation for the Arroyo Mocho Stanley Reach Stabilization Project in Livermore, Alameda County, California (Corps File No. 2013-00078S). July 1, 2019b.

3.2.6 Energy

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
VI. ENERGY — Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) **Less than Significant Impact.** The Project’s construction would consume energy in the form of diesel and gasoline fuels to power equipment and transport materials to the Project site. A temporary increase in local truck trips would occur during the construction period and is provided in more detail in the Section 3.2.17, *Transportation*, of this document. The energy used during construction would be limited to that required to transport materials (i.e. rock and gravel) used for re-stabilization of Stanley Reach. No additional electrical infrastructure is proposed or required with the Project. Operation and maintenance of the Project is not anticipated to increase consumption of diesel or gasoline fuel, compared to existing conditions as staff would remain as existing and truck trips would remain minimal. Therefore, following construction the Stanley Reach channel would be maintained in a manner consistent with existing conditions. Thus, energy use would not be wasteful, inefficient, or unnecessary for construction or operation of the Project. Impacts associated with temporary increases in fuels associated with construction of the Project would be less than significant.
- b) **No Impact.** The Open Space and Conservation Element of the General Plan contains goals and policies to promote energy use efficiency, sustainability, and conservation (City of Livermore, 2003). Although the Project’s construction would include the use of fuels to transport rock materials for channel re-stabilization, the Project would not interfere or obstruct the implementation of City energy efficiency policies. The Project would comply with all State and local plans for vehicle fuel efficiency because all vehicles and machinery that are sold within California are required to meet those standards. Therefore, the Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Under this criterion, there would be no impact.

Mitigation Measures

No mitigation measures are required.

References

City of Livermore, 2003. Open Space and Conservation Element. Available online:
<http://www.cityoflivermore.net/civicax/filebank/documents/6099>

3.2.7 Geology and Soils

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
VII. GEOLOGY AND SOILS — Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a.i) **No Impact.** The State Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) prohibits the development of structures for human occupancy across active fault traces. Under this Act, the California Geological Survey (CGS) has established “Zones of Required Investigation” on either side of Holocene-active faults⁶ that delineates areas susceptible to surface fault rupture. The zones are referred to as Earthquake Fault Zones (EFZs) and are shown on official maps published by the CGS (CGS, 2020). Surface rupture occurs when the ground surface is broken due to a fault movement during an earthquake; typically, these types of hazards occur within 50 feet of a Holocene-active fault (CGS, 2018).

⁶ Holocene-active faults refer to faults that have displayed surface displacement within Holocene time (the last 11,700 years) (CGS, 2018).

The Project site does not lie within any mapped EFZs according to the available data (CGS, 2020). Although the area can be affected by earthquakes or seismic ground shaking, there are no current data available that indicates that Holocene-active faults are present within the Project site. The nearest faults that are designated EFZs are the Verona Fault (CGS, 1982a) approximately 4.5 miles southwest of the Project site, and the Calaveras Fault (CGS, 1982b) approximately 6 miles southwest of the Project site.

The Project does not include habitable structures or facilities and would not expose people or structures to potential substantial adverse effects relating to rupture of a known earthquake fault. There would be no impact related to with surface fault rupture.

- a.ii) **Less than Significant Impact.** The Project site is located in a historically seismically active portion of California. The 2014 Working Group on California Earthquake Probabilities⁷ concluded that there is a 72 percent probability that a magnitude (M_w) 6.7 earthquake or higher will strike the San Francisco Bay Area before the year 2045 (Field et al., 2015). As discussed above, there are no known faults that intersect the Project site; however, there are a number of fault systems in the region (CGS, 2010). The most significant of these fault systems is the active Holocene Calaveras fault zone. According to the WGCEP, there is an approximately 25 percent probability that there will be an earthquake of magnitude 6.7 or greater, before the year 2045 in the Calaveras fault zone (Field et al., 2015).

There are no known published design criteria for a channel restoration project such as this (i.e., California Building Code, U.S. Army Corps of Engineers levee design, etc.). The Project's design would be subject to the standards of civil engineering practice in force at the time of design and appropriate for the region. All construction onsite would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the standards of civil engineering practice. Adherence to these standards would ensure the Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Furthermore, the Project does not include habitable structures or facilities that would expose people or structures to the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, impacts would be less than significant.

- a.iii) **Less than Significant Impact.** Liquefaction is a phenomenon in which unconsolidated, water saturated sediments become unstable due the effects of strong seismic shaking. During an earthquake, these sediments can behave like a liquid, potentially causing severe damage to overlying structures. Lateral spreading is a variety of minor landslide that occurs when unconsolidated liquefiable material breaks and spreads due to the effects of gravity, usually down gentle slopes. Liquefaction-induced lateral spreading is defined as the finite, lateral displacement of gently sloping ground as a result of pore-

⁷ Also referred to as WGCEP 2014, this is a working group comprised of seismologists from the U.S. Geological Survey (USGS), California Geological Survey (CGS), Southern California Earthquake Center (SCEC), and California Earthquake Authority (CEA).

pressure buildup or liquefaction in a shallow underlying deposit during an earthquake. The occurrence of this phenomenon is dependent on many complex factors, including the intensity and duration of ground shaking, particle-size distribution, and density of the soil.

The potential damaging effects of liquefaction include differential settlement, loss of ground support for foundations, ground cracking, heaving and cracking of structure slabs due to sand boiling, and buckling of deep foundations due to ground settlement. Dynamic settlement (i.e., pronounced consolidation and settlement from seismic shaking) may also occur in loose, dry sands above the water table, resulting in settlement of and possible damage to overlying structures. In general, a relatively high potential for liquefaction exists in loose, sandy soils that are within 50 feet of the ground surface and are saturated (below the groundwater table). Lateral spreading can move blocks of soil, placing strain on buried pipelines that can lead to leaks or pipe failure.

The CGS published a composite map of the Livermore Quadrangle overlain with Alquist-Priolo Earthquake Fault Zones and Seismic Hazard Zones (i.e., liquefaction and earthquake-induced landslides). The map indicates that the Project site is within mapped Liquefaction Zones along the historic Arroyo Mocho Channel and the channelized Arroyo Mocho (Stanley Reach) (CGS, 2008).

However, the Project would not include the construction of habitable structures or facilities and construction activities would be temporary. Any potential structural damage that could occur from liquefaction due to groundshaking would be minimized through the adherence to applicable design requirements. The Project would be required to adhere to standards of civil engineering practice in force at the time of design and appropriate for the region. As noted above, there are no known published design criteria for a channel restoration project such as this. Furthermore, the Project does not include habitable structures or facilities that would expose people or structures to the risk of ground failure. Therefore, the impact related to liquefaction and other seismic-related ground failure is less than significant.

- a.iv) **No Impact.** The Project site is located on the floor of the Livermore Valley in relatively level terrain. The Project site is not within a mapped Landslide Zone (CGS, 2008), and there are no landslides within the project site according to the Landslide Inventory Map of the Livermore (CGS, 2010b). Also, the Project does not include habitable structures or facilities that would expose people or structures to the risk of landslide. Therefore, relative to landslides, there would be no impact.
- b) **Less than Significant Impact.** The construction activities associated with the Project would involve ground-disturbing earthwork, including earthmoving, excavation, and grading. These activities could increase the susceptibility of soils on the Project site to erosion by wind or water and subsequently result in the loss of topsoil. If not controlled and managed, the impact of soil erosion would be significant. As the Project would create over 1.0 acre of ground disturbance, a Stormwater Pollution Prevention Plan (SWPPP) would be developed and implemented as part of the Project in accordance with a NPDES

General Permit for Stormwater Discharge Associated with Construction and Land Disturbance Activities (*NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities* (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The SWPPP would include Best Management Practices (BMPs) designed to control and reduce soil erosion. The BMPs may include dewatering procedures, storm water runoff quality control measures, watering for dust control, and the construction of silt fences, as needed. During construction-related activities, soil compaction associated with bank formation would further reduce the potential for soil erosion. The implementation of these soil and erosion control measures would ensure that soil disturbance and loss would result in a less than significant impact.

- c) **Less than Significant Impact.** Geologic mapping by Dibblee and Minch (2006) and Vincent E. Barlock (1988) indicates Holocene-age alluvial deposits are present at the surface within a majority of the Project site, which are generally susceptible to liquefaction due to groundshaking. However, the Project would not include the construction of habitable structures and construction activities would be temporary. Any potential structural damage that could occur from liquefaction due to groundshaking would be minimized through the adherence to applicable standards of civil engineering practice, which would reduce the impact to less than significant.
- d) **Less than Significant Impact.** Expansive soils are soils that possess a “shrink-swell” characteristic. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying; the volume change is reported as a percent change for the whole soil. This soil property is measured using the coefficient of linear extensibility (COLE) (NRCS, 2017). The Natural Resources Conservation Service (NRCS) relies on linear extensibility measurements to determine the shrink-swell potential of soils. If the linear extensibility percent is more than 3 percent (COLE=0.03), shrinking and swelling may cause damage to building, roads, and other structures (NRCS, 2017).

NRCS Web Soil Survey data indicates the soil underlying the Project site has a 6 percent linear extensibility rating, which is considered a moderate to high linear extensibility rating (NRCS, 2019).

As noted above, there are no known published design criteria for a channel restoration project such as this. The Project’s design would be subject to the standards of civil engineering practice in force at the time of design and appropriate for the region. All construction onsite would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the standards of civil engineering practice. Adherence to these standards would ensure the Project would not directly or indirectly cause substantial adverse effects, including failure risk involving expansive soils. Also, the Project does not include habitable structures or facilities that would expose people or structures to the risk of loss, injury, or death involving expansive

- soils. The Project would not create substantial direct or indirect risks to life or property related to expansive soils, and impacts would be less than significant.
- e) **No Impact.** The Project does not include the use of septic tanks or alternative waste water disposal system and, therefore, would not require the use of soils that are adequate for supporting such systems. There would be no impact associated with the Project having adequate soils for septic tanks or alternative waste water disposal systems.
- f) **Less than Significant with Mitigation Incorporated.** A significant impact would occur if a project would destroy a unique paleontological resource or site, or a unique geologic feature. Paleontological resources are the fossilized evidence of past life found in the geologic record. Despite the tremendous volume of sedimentary rock deposits preserved worldwide, and the enormous number of organisms that have lived through time, preservation of plant or animal remains as fossils is an extremely rare occurrence. Because of the infrequency of fossil preservation, fossils are considered to be nonrenewable resources. Because of their rarity, and the scientific information they can provide, fossils are highly significant records of ancient life.

Geologic mapping by Dibblee and Minch (2006) and Vincent E. Barlock (1988) indicates Holocene-age alluvial deposits are present at the surface within a majority of the Project site. These deposits have low-to-high paleontological sensitivity, increasing with depth, with older, high sensitivity alluvium present at depth. Also mapped at the surface at the eastern extent of the Project site, are deposits known as the Livermore Gravels (Dibblee & Minch, 2006; Barlock, 1988). The Livermore Gravels are considered to have high paleontological sensitivity due to the presence of vertebrate fossils within this formation in Alameda County (UCMP, 2020a); one such discovery was uncovered approximately 1.0 mile to the southwest of the Project site. Additionally, while not mapped at the surface within the Project site, there are older, Pleistocene deposits mapped approximately 0.5 mile to the northeast and east of Site 2. These Pleistocene-age deposits are also considered to have a high paleontological sensitivity due to the presence of Pleistocene-age vertebrate fossil discoveries in Alameda County (UCMP, 2020b).

Ground disturbing activity during Project construction is anticipated to be up to 6 feet in depth, and is therefore likely to disturb geologic units with high paleontological sensitivity. The destruction of fossils would be a potentially significant impact to paleontological resources. In order to reduce impacts to paleontological resources to less than significant, **Mitigation Measures GEO-1: Inadvertent Discovery of Paleontological Resources**, is recommended and provided below.

Mitigation Measures

Mitigation Measure GEO-1: Inadvertent Discovery of Paleontological Resources.

Prior to construction, a qualified paleontologist meeting the standards of the Society of Vertebrate Paleontology (SVP) with expertise in California paleontology shall develop a paleontological resources training program for all construction and field workers involved in ground-disturbing activities that details the recognition and importance of

paleontological resources, and establishes accidental discovery procedures should paleontological resources be encountered during construction.

Paleontological monitoring is necessary for all ground-disturbing activities that occur in previously undisturbed formations mapped as Pleistocene-age Alluvium and/or Pliocene and Pleistocene-age Livermore Gravels. Paleontological monitoring shall be conducted by a qualified paleontological monitor that meets the standards of the SVP.

If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, cast, molds, or impressions are discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified paleontologist can assess the nature and importance of the find and, if necessary, develop appropriate salvage measures in conformance with SVP standards.

References

- Barlock, Vincent E., 1988. *Geologic Map of the Livermore Gravels, Alameda County, California*. Open-File Report 88-516. United States Geological Survey. Map. Scale 1:48,000.
- California Geological Survey (CGS), 1982a. *Earthquake Zones of Required Investigation - Livermore Quadrangle*; Earthquake Fault Zones, Official Map. Released January 1, 1982. Map. Scale 1:24,000.
- CGS, 1982b. *Earthquake Zones of Required Investigation - Dublin Quadrangle*; Earthquake Fault Zones, Official Map. Released January 1, 1982. Map. Scale 1:24,000.
- CGS, 2008. *Earthquake Zones of Required Investigation - Livermore Quadrangle*; Seismic Hazard Zones, Official Map. Released August 27, 2008. Map. Scale 1:24,000
- CGS, 2010a. Fault Activity Map of California. Accessible online: <http://maps.conservation.ca.gov/cgs/fam/>. Accessed on June 4, 2020.
- CGS, 2010b. *Landslide Inventory Map of the Livermore Quadrangle, Alameda and Contra Costa Counties, California*. Map. Scale 1:24,000.
- CGS, 2018. Special Publication 42 (Revised 2018). *Earthquake Fault Zones – A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California*. California Geological Survey.
- CGS, 2020. EQ ZAPP. Earthquake Zones of Required Investigation. California Geological Survey. Available online: <https://maps.conservation.ca.gov/cgs/EQZApp/app/>. Accessed on June 4, 2020.
- Dibblee, Thomas W. and John A. Minch (Dibblee & Minch), 2006. *Geologic Map of the Livermore Quadrangle*. Dibblee Geological Foundation. Map. Scale 1:24,000.
- Field, E. H., Glenn P. Biasi, Peter Bird, Timothy E. Dawson, Karen R. Felzer, David D. Jackson, Kaj M. Johnson, Thomas H. Jordan, Christopher Madden, Andrew J. Michael, Kevin R. Milner, Morgan T. Page, Tom Parsons, Peter M. Powers, Bruce E. Shaw, Wayne R. Thatcher, Ray J. Weldon II, and Yuehua Zeng (Field et al.), 2015. Long-Term Time-Dependent Probabilities for the Third Uniform California Earthquake Rupture Forecast

(UCERF3). Bulletin of the Seismological Society of America, Vol. 105, No. 2A. pp. 511-543. April 2015. doi: 10.1785/0120140093.

Natural Resources Conservation Service (NRCS), 2017. *Title - National Soil Survey Handbook*. Part 618 – Soil Properties and Qualities. Section 618.41, Linear Extensibility Percent.

NRCS, 2019. Linear Extensibility—Alameda Area, California. Map. Scale 1: 8,970.

Society of Vertebrate Paleontology (SVP), 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Prepared by: SVP Impact Mitigation Guidelines Revision Committee.

University of California Museum of Paleontology (UCMP), 2020a. UC Museum of Paleontology Localities database.

UCMP, 2020b. UC Museum of Paleontology Localities database.

3.2.8 Greenhouse Gas Emissions

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
VIII. GREENHOUSE GAS EMISSIONS —				
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

- a) **Less than Significant Impact.** The Project is located in the City of Livermore, California, within the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The BAAQMD has developed their California Environmental Quality Act Air Quality Guidelines (CEQA Guidelines) to assist lead agencies in determining air quality and greenhouse gas (GHG) impacts that would result from Project-related emissions within the SFBAAB. The BAAQMD CEQA Guidelines do not include a threshold for construction-related GHG emissions; however, the BAAQMD recommends that GHG emissions from construction be quantified and evaluated in relation to the State GHG reduction goals set by Assembly Bill (AB) 32. Although the CEQA Guidelines do not include a quantitative construction-related GHG threshold, the BAAQMD has established an operational threshold of 1,100 metric tons of carbon dioxide equivalents (MTCO_{2e}), which contributes to GHG emission reductions consistent with AB 32 goals.

AB 32 includes a statewide GHG reduction target to achieve 1990 levels by the year 2020, while SB 32 extends the statewide target to a reduction of 40 percent below 1990 levels by 2030. It is acknowledged that the BAAQMD CEQA Guidelines were developed to focus on emission reductions by 2020, and neither the BAAQMD nor CARB have provided guidance or recommendations for significance thresholds to evaluate consistency with emission reduction goals for years beyond 2020. However, because the Project would be fully built out in 2021, determining impact significance using the BAAQMD threshold based on AB 32 is more appropriate for the Project than use of a threshold based on the SB 32 reduction target. This is further supported by the fact that the Project would generate negligible emissions beyond 2021, as discussed in the operational analysis below. Thus, the BAAQMD thresholds of significance for GHG emissions, identified in the CEQA Guidelines, were used for both construction and operational analyses.

The Project would generate the majority of its GHG emissions during construction from use of heavy-duty off-road equipment, trucks transporting cut and fill material to and from the Project site, and vendor and worker vehicles commuting to and from the Project site. During the operational phase, the Project would generate a minimal amount of GHG

emissions from employees traveling to and from the Project site to perform routine maintenance. Project-related GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. Project-specific modeling inputs included construction schedule, equipment types and amounts, number of construction workers, material hauling trips, and haul trip distance. Where Project-specific information was not available, CalEEMod defaults were used. **Table 3.2.8-1** summarizes the construction and operational GHG emissions that would result from the Project.

**TABLE 3.2.8-1
PROJECT-RELATED GHG EMISSIONS (METRIC TONS/YEAR)**

Emissions	CO₂e
Construction Emissions (2021)	374
Annual Operational Emissions	2.83

SOURCES: ESA, 2020; BAAQMD, 2017c.

As discussed above, the BAAQMD has not established a threshold for determining the significance of construction-related GHG emissions; instead, the BAAQMD CEQA Guidelines recommend that GHG emissions from construction activity be quantified and evaluated in relation to AB 32 GHG reduction goals. The Project would generate approximately 374 MTCO₂e during the 130-day construction period. As discussed in detail under Question b, construction of the Project would implement measures of the Livermore Climate Action Plan (CAP) designed to meet AB 32 GHG reduction goals, including limiting heavy-duty truck idling time to three minutes or less (City of Livermore, 2012). Therefore, construction of the Project would be consistent with the goals set by AB 32 and construction-related emissions of GHGs would be considered less than significant.

Operation of the Project would generate approximately 2.83 MTCO₂e per year, as shown in Table 3.2.8-1. These operational emissions would be negligible in comparison to the BAAQMD threshold of 1,100 MTCO₂e per year for GHGs. Therefore, the Project would have a less-than-significant impact with regard to operational GHG emissions.

- b) **Less than Significant Impact with Mitigation Incorporated.** CEQA Guidelines Section 15183.5 allows public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of GHGs. The Project site is located in the City of Livermore, which adopted the Climate Change Element to the City's 2003-2025 General Plan in 2009. The City subsequently adopted their CAP in November 2012 to support the goals of the Climate Change Element. The CAP sets a GHG emissions reduction target for the City and includes various measures for the City to implement to meet their GHG reduction goal (City of Livermore, 2012).

The majority of the measures discussed in the CAP are aimed at reducing energy use, water use, and waste reduction in buildings and commercial developments. The Project would not include any structures; therefore, many of the measures discussed in the CAP

would not be applicable to the Project. The only CAP measure that would be applicable to the Project is measure On Road-1, which recommends that the City adopt an ordinance that reduces idling time for heavy-duty trucks beyond what is required by the California Air Resources Board; however, the City of Livermore has not yet adopted an ordinance to reduce idling time in accordance with the CAP (City of Livermore, 2012). As discussed within the Air Quality section, the Project would implement **Mitigation Measure AQ-1: Implement BAAQMD Basic Construction Mitigation Measures**, which includes provisions to minimize idling times 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 [CCR]). Thus, the Project would be consistent with applicable measures described in the CAP and the Project would not conflict with a plan, policy, or regulation adopted for the purpose of reducing GHG emissions; the impact would be considered less than significant.

Mitigation Measures

Mitigation Measure AQ-1: Implement BAAQMD Basic Construction Mitigation Measures.

Please refer to Section 3.2.3, *Air Quality*, for full description of Mitigation Measure AQ-1.

References

Bay Area Air Quality Management District (BAAQMD), 2017. *California Environmental Quality Act Air Quality Guidelines*. May 2017. Available at https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed June 11, 2020.

City of Livermore, 2012. *Livermore Climate Action Plan*. November 2012. Available at <http://www.cityoflivermore.net/civicax/filebank/documents/9789/>. Accessed on June 11, 2020.

3.2.9 Hazards and Hazardous Materials

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
IX. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

- a, b) **Less than Significant Impact.** Construction of the Project would involve the routine use of small quantities of hazardous materials commonly used during construction activities such as fuels, lubricants, and oil for construction equipment. Storage and use of hazardous materials at the construction site (i.e., staging areas) during routine use could result in the accidental release of small quantities of hazardous materials, which could degrade soil and/or surface water within the Project area. This impact would be potentially significant.

Project construction would require implementation of BMPs to minimize the risk of a hazardous materials release during construction activities, further discussed under Section 3.2.10, *Hydrology and Water Quality*. The use, storage, transport, and disposal of hazardous materials during construction, operation, and decommissioning of the Project would be carried out in accordance with federal, state, and county regulations. These requirements would ensure that hazardous materials used for construction would be stored in appropriate containers, with secondary containment to prevent a potential release. Additionally, project-related spills of hazardous materials would be required to be

- reported to appropriate regulatory entities, including but not limited to the City of Livermore, U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and the San Francisco Bay Regional Water Quality Control Board (RWQCB). Hazardous materials spills would be cleaned up immediately, and contaminated soils would be excavated and transported to approved disposal areas, consistent with State and local requirements. Therefore, impacts associated with the potential to create a significant hazard to the public or the environment would be less than significant. Project operation and maintenance would use negligible amounts of hazardous materials contained in mobile equipment and in accordance with applicable regulations any such materials would not be stored and disposed of within the Project site. The impact would be less than significant.
- c) **Less than Significant Impact.** The Granada High School is approximately one-quarter mile southeast of the Project on the south side of East Stanley Boulevard and Murrieta Boulevard. As discussed in Section 3.2.17, *Transportation*, access to the Project site would be from Interstate 580, with local access via various roads, including Isabel Avenue/Highway 84, East Jack London Boulevard, East Stanley Boulevard, and North Murrieta Boulevard. However, all of the access would be from the north and the high school is located south of the Project site. The construction traffic would not travel by the school and construction activities would be limited to the Stanley Reach Project site. The potential for hazardous emissions or handling of hazardous materials would not occur in proximity to the school. Therefore, the impact would be less than significant.
- d) **No Impact.** The Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (referred to as the “Cortese List”). Therefore, the Project would not create a significant hazard to the public or the environment; there would be no impact under this criterion.
- e) **Less than Significant Impact.** The Livermore Municipal Airport is approximately 1.25 miles northwest of the Project site. While the Project site is within an Airport Influence Area (AIA) and Zone 6: Traffic Pattern Zone, as depicted in the Airport Layout Plan and Narrative Report for Livermore Municipal Airport, the Project site is not within an approach or take-take path (City of Livermore, 2014). The Project would not involve any activities that would pose a safety hazard or excessive noise for people working or residing in the area (see Section 3.2.13, *Noise and Vibration*, for detailed analysis of noise-related impacts). The tallest piece of equipment would be a backhoe, which would not be tall enough to interfere with air traffic. The Project would not result in a safety hazard or excessive noise for people residing or working in the project area. The impact would be less than significant.
- f) **Less than Significant Impact.** The City of Livermore’s Emergency Operations Plan (City of Livermore, 2018) does not specify any designated evacuation routes. This analysis assumes that evacuation routes would be determined as needed on a case-by-case basis by emergency response agencies. As the Project construction would not require road closures, or obstruct any nearby roadways; the Project would not impair

implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. There would be a less than significant impact.

- g) **Less than Significant with Mitigation Incorporated.** According to the California Department of Forestry and Fire Protection (CAL FIRE), Fire Resource Assessment Program (FRAP) maps, the Project site is mapped within a Non-VHFHSZ (CAL FIRE, 2008).

However, as discussed in Section 3.2.20, *Wildfire*, Project construction would require multiple vehicle trips and use of heavy machinery that could result in a potential spark or ignition source for surrounding vegetation. Due to the possible impacts to the residents in surrounding the area, **Mitigation Measure WIL-1: Fire Safety Practices** would be implemented to reduce the impact of a fire during construction. Implementation of WIL-1 would ensure that the Project would not significantly exacerbate risk associated with the loss, injury, or death involving wildland fires.

Mitigation Measures

Mitigation Measure WIL-1: Fire Safety Practices.

Please refer to Section 3.2.20, *Wildfire*, for full description of Mitigation Measure WIL-1.

References

- California Department of Forestry and Fire Protection (CAL FIRE), 2008. *Very High Fire Hazard Severity Zones in LRA* for Alameda County. Map. Scale 1:100,000.
- City of Livermore, 2014. *Airport Layout Plan Update and Narrative Report* for Livermore Municipal Airport. September 2014.
- City of Livermore, 2018. *City of Livermore Emergency Operations Plan*. January 2018.

3.2.10 Hydrology and Water Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
X. HYDROLOGY AND WATER QUALITY —				
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

- a) **Less than Significant Impact.** The San Francisco Bay Basin Plan (SFBRWQCB 2016⁸) includes the designated Beneficial Uses for Arroyo Mocho, and are as follows: Groundwater Recharge, Cold Freshwater Habitat, Fish Migration, Fish Spawning, Warm Freshwater Habitat, Wildlife Habitat, Water Contact Recreation, and Noncontact Water Recreation.

Per California’s Clean Water Act Section 303(d) Listing Policy, every two years the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards evaluate water quality data to determine whether water quality criteria and standards are exceeded in waters of the State. The current 2014/2016 303(d) List identifies Arroyo Mocho as an impaired water body,⁹ due to high levels of diazinon. A

⁸ San Francisco Bay Regional Water Quality Control Board. 2016. Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). Available: https://www.waterboards.ca.gov/sanfranciscobay/basin_planning.html.

⁹ State Water Resources Control Board. 2014/2016 California Integrated Report (Clean Water Act Section 303[d] List and 305[b] Report). Available: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated_2014_2016.shtml.

Total Maximum Daily Load (TMDL) was adopted by the SWRCB in 2006 to reduce diazinon and other urban toxicity contaminants. The proposed channel restoration would not use diazinon (an insecticide) and would, therefore, not contribute to existing toxicity in the Arroyo Mocho watershed.

As shown in Table 2-1 in Chapter 2, *Project Description*, the entire restoration area totals to 3.01 acres and 131,680 square feet, and construction activities would include (but are not limited to) the removal of 17,100 cubic yards of deposited alluvial material. These activities could release sediment and increase turbidity in any water in Stanley Reach at that time, although the channel would likely be dry during construction. As the construction of the Project would disturb more than 1.0 acre of land, the Project would be required to obtain coverage through the San Francisco Bay Regional Water Quality Control Board (RWQCB) under the NPDES General Permit for Stormwater Discharge Associated with Construction and Land Disturbance Activities (*NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities* (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). As discussed in Section 3.2.7, *Geology and Soils*, the Construction General Permit would include development and implementation of a SWPPP. The objectives of a SWPPP are to identify pollutant sources that may be delivered off-site (in the form of runoff) and affect the quality of storm water discharge; to implement site controls and practices to reduce stormwater pollution; and to protect water quality of receiving waters. The SWPPP would include site-specific BMPs such as strategically placed silt fences and straw wattles to minimize erosion on site and reduce or otherwise prevent conditions of erosion and storm water runoff during construction.

While the channel would likely be dry during construction, dewatering activities may be necessary if water from the Department of Water Resources (DWR) is available and directed through Arroyo Mocho. Specifically, Section 2.5.6, *Dewatering*, discusses the installation of two temporary cofferdams upstream and downstream edge of the active Project construction area. DWR groundwater data indicate the depth to groundwater in the area is approximately 30 feet below the ground surface (DWR, 2020). Project excavation is anticipated to be up to 6 feet in depth at Site 2 and up to 4 feet in depth at Site 1a, and therefore not expected to encounter groundwater; therefore, dewatering would not discharge any groundwater.

However, the cofferdams would temporarily divert summer recharge flows, if present, into the low flow historic Arroyo Mocho channel. Water presently flows through the low-flow historic channel. The Stanley Reach flood channel is only used during high flow events (i.e., rainy season storm events) or to convey DWR water to the Chain of Lakes recharge ponds to the west in the dry season¹⁰. This episodic, unscheduled diversion of summer recharge flows to the low-flow historic channel of Arroyo Mocho is not expected to result in increased erosion or release pollutants in or from the low flow channel.

¹⁰ These recharge ponds, located between the cities of Livermore and Pleasanton, are former gravel mines or pits referred to by Zone 7 as the “Chain of Lakes”.

With implementation of a SWPPP and accompanying BMPs, Project construction would not violate water quality standards or release sediment and/or pollutants in Stanley Reach, historic Arroyo Mocho, or anywhere else in the Arroyo Mocho watershed. In the long term, there would be no change in land use or permanent fuel or chemical storage at Stanley Reach as part of the Project. Therefore, Project impacts to water quality would be less than significant.

- b) **Less than Significant Impact.** The Project would not include the addition of any new impervious surfaces and, as a result, would not substantially interfere with groundwater recharge. Further, the Project does not include groundwater extraction. As discussed in Chapter 2, *Project Description*, one of the Project objectives is to improve groundwater recharge by repairing and stabilizing four sites within Stanley Reach that were improved as part of the Arroyo Mocho Stanley Reach Riparian Restoration and Stanley Reach Pilot Project.

Also discussed in Chapter 2, *Project Description*, in the summer months, the water in Arroyo Mocho and Stanley Reach typically consists of artificial recharge of the groundwater basin from DWR's South Bay Aqueduct. In the summer when DWR water is available, flows are released from upstream dams to facilitate groundwater recharge through the gravel bed channels and in the recharge ponds located downstream and west of the Project site. Depending on groundwater recharge needs, up to 5 cubic feet per second (cfs) could be released into the Stanley Reach channel. As noted in Section 2.5.6, *Dewatering*, during periods of flow dewatering may be required to ensure work is conducted outside of the wetted channel. Cofferdams would be installed to divert flow around the work area via the low-flow historic Arroyo Mocho channel that circumvents Stanley Reach to the north to create a temporary dry work zone within the Project work area. This would allow the supply of DWR water to the recharge ponds to continue during construction.

As the dewatering activities would only take place during construction and one Project objective is to facilitate groundwater recharge, the Project's adverse impacts related to groundwater recharge would be less than significant.

- c.i) **Less than Significant Impact.** The Project would encourage maintenance of the existing drainage pattern of Stanley Reach flood control channel by replacing, adding, or removing sediment and rock from select areas of Stanley Reach. Elements of the Project are designed to prevent future channel flanking and bank erosion in Stanley Reach. As previously discussed above in Question a, the Project would implement BMPs to prevent erosion and siltation during construction, such that construction impacts related to erosion and siltation would be less than significant.

During operations, the Project would reduce the potential for erosion and sedimentation on- or offsite by removing accumulated sediment, expanding the roughened channel, and placing planted riprap along the existing eroding banks. The new roughened channels at Sites 1b and 2 would have a V-shape with a defined low point and shallow cross slope to

provide an initial flow path. The gentle V-shape of the channel would help focus flow and higher velocities toward the center of the channel, though it is anticipated that the actual thalweg¹¹ would be dynamic laterally in response to deposition and scour of sediment in Stanley Reach. Previous attempts to place a “hollow” rock matrix of large boulders within an otherwise uniform fine-grain system to define the [former] channel resulted in the winnowing of the fine-grained material from the matrix, destabilizing the large boulders, and exposing the channel and banks to erosive forces. The current Project approach focuses on installation of a well-graded rock mixture integrating a variety of rock size classes with a several larger class keystones incorporated into the rock matrix that eliminates unprotected areas of the channel bed. The irregular rock surface on the channel bed would be ‘seeded’ with native gravels and subjected to the natural erosion and depositional processes along the entire length of Stanley Reach. Project operation would, therefore, improve current sedimentation and erosion issues in Stanley Reach and have less-than-significant impacts related to erosion and sedimentation.

- c.ii) **Less than Significant Impact.** The Project would not include the addition of impervious surfaces and itself would not produce substantive runoff volumes such that there would be a potential to cause flooding on- or off-site. The Project would be required to adhere to post-construction drainage control requirements in accordance with the SWPPP that would also include measures to control runoff volumes directly related to the Project’s construction. The purpose of the Project is to restore the flood control functionality of Stanley Reach and the Project is designed to achieve that. Therefore, because there would be no new impervious surfaces added as part of the Project and because the Project would be required to implement a SWPPP, the potential for flooding on- or off-site would be less than significant.
- c.iii) **Less than Significant Impact.** As noted in Question b in Section 3.2.7, *Geology and Soils*, the Project would implement BMPs to control runoff volume and quality during construction. As noted in Section 3.2.9, *Hazards and Hazardous Materials*, other than the limited use of fuels and lubricants in equipment during maintenance activities, no hazardous materials or other potential pollutants would be permanently stored on site during operation. Therefore, the runoff conveyed by Stanley Reach would not have the potential to exceed capacity of the existing drainage system or create additional sources of polluted runoff. The impact would be less than significant.
- c.iv) **Less than Significant Impact.** According to DWR’s Best Available Maps (BAM) and the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the area, the Project site is within the 100-year flood zone and is subject to inundation by the 100-year chance flood (because it is a flood control channel).

As discussed in Chapter 2, *Project Description*, the Stanley Reach flood channel was destabilized due to repeated heavy storm events that, over time, caused the thalweg to shift, causing the primary channel to outflank¹² the two roughened channel elements

¹¹ The line of lowest elevation within a valley or watercourse.

¹² To flow outside of the designated flowpath.

constructed in 2013. These high velocity storm events resulted in substantial scouring of the rock matrix and deposition of material at the downstream portion of the roughened channels. As a result, the functionality of the flood channel was reduced. The purpose of the Project is to restore functionality of the flood channel by repairing and stabilizing it by removing the accumulated material from sedimentation basin, expanding areas of roughened channel, and repairing an embankment.

As noted above, the Project would encourage maintenance of the existing drainage pattern and flood control function of Stanley Reach flood control channel by replacing, adding or removing sediment and rock from select areas of Stanley Reach. The Project activities would not impede or redirect flood flows in a manner that would adversely alter or deteriorate existing drainage patterns; therefore, the impact would be less than significant.

- d) **Less than Significant Impact.** As discussed above, the Project site is within the FEMA 100-year flood zone (DWR, 2020; FEMA, 2009) as it is a flood control facility. As noted in Section 3.2.9, *Hazards and Hazardous Materials*, the Project would not include the storage of any pollutants that would be at risk of release due to inundation because no new chemicals or fuels would be stored onsite. Seiches are large waves on an enclosed or semi-enclosed body of water that can be caused by seismic activity. The Project area is landlocked and not within proximity of any closed or semi-enclosed water body; there is no risk of the project altering conditions related to seiches. Tsunamis occur on the ocean and the Project area is not located near the ocean. Therefore, there would be a less-than-significant impact related to risk of release of pollutants due to project inundation caused by a flood, seiche, or tsunami.
- e) **Less than Significant Impact.** As discussed above, one of the purposes of the Project is to improve groundwater recharge by repairing and stabilizing four sites within Stanley Reach that were improved as part of the Arroyo Mocho Stanley Reach Riparian Restoration and Stanley Reach Pilot Project.

The Project's role in the provision of DWR water from the South Bay Aqueduct for groundwater recharge in the Livermore Valley would be consistent with the goals and objectives discussed in the *Annual Report for the Sustainable Groundwater Management Program 2019 Water Year (Zone 7, 2020)*. The Project site is within the Livermore Valley Groundwater Basin, for which Zone 7 Water Agency is the governing Groundwater Sustainability Agency (GSA). As noted above, the Project would not increase groundwater extraction compared to existing conditions, and would instead be designed to address flood control functionality while improving groundwater recharge. As discussed in Question a, the Project would be consistent with the San Francisco Bay Basin Plan and not contribute to the exceedance of Arroyo Mocho's TMDL for diazinon. Therefore, impacts related to conflict with or obstruction of a water quality control plan or sustainable groundwater management plan would be a less than significant.

Mitigation Measures

No mitigation measures are required.

References

Department of Water Resources (DWR), 2019. Best Available Maps (BAM). Available online: gis.bam.water.ca.gov/bam/. Accessed on June 10, 2020.

DWR, 2020. Water Data Library – Groundwater Level Reports. Groundwater Level for Station 376848N1217787W001. Accessed on June 18, 2020

Federal Emergency Management Agency (FEMA), 2009. FEMA’s Flood Insurance Rate Map for Alameda County, California and Incorporated Areas. Map Number: 06001C0341G. Effective date: August 3, 2009. National Flood Insurance Program.

Zone 7 Water Agency (Zone 7), 2005. *Groundwater Management Plan for Livermore-Amador Valley Groundwater Basin*. September 2005.

Zone 7, 2020. *Annual Report for the Sustainable Groundwater Management Program 2019 Water Year, Livermore Valley Groundwater Basin*. March 2020.

3.2.11 Land Use and Planning

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
XI. LAND USE AND PLANNING — Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) **No Impact.** The Project would be constructed entirely within the existing Stanley Reach flood control channel. The Project would be limited to channel stabilization, enhancement measures, and riparian restoration and does not propose any new components that would result in a division of the existing residential communities. There would be no impact under this criterion.
- b) **No Impact.** The Project site is the Stanley Reach flood control channel and is designated as Open Space (OSP) in the City of Livermore General Plan. The General Plan OSP designation includes parks, trail ways, recreation areas, recreation corridors, and protected areas, such as creeks and arroyos, or similar open space uses determined appropriate for the site. All proposed structures on parcels designated as OSP are subject to City Design Review (City of Livermore, 2013). The Project would not change the use or character of Stanley Reach and would remain consistent with the General Plan OSP designation. No other land use plans, policies, or regulations are known to be applicable to the Project. Therefore, there would be no impact.

Mitigation Measures

No mitigation measures are required.

References

City of Livermore, 2013. General Plan – Land Use Element. Available online:
<http://www.cityoflivermore.net/civicax/filebank/documents/6093>. Amended 2013.

3.2.12 Mineral Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
XII. MINERAL RESOURCES — Would the project:				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a, b) **No Impact.** The Project site is not located within an area classified as a mineral resource by the State Geologist (City of Livermore, 2014; CGS, 1996). Given that the Project is neither located in or a near a mineral resource recovery site, nor is it located in an area of regional significance, there would be no loss of availability of a known mineral resource (City of Livermore, 2014). There would be no impact under this criterion.

Mitigation Measures

No mitigation measures are required.

References

California Geological Survey (CGS), 1996. Designated Areas Update, Regionally Significant Construction Aggregate Resource Areas in the South San Francisco Bay Production-Consumption Region, Livermore Quadrangle.

City of Livermore, 2014. *City of Livermore General Plan*. Chapter 8 – Open Space and Conservation Element.

3.2.13 Noise and Vibration

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

Discussion

- a) **Less than Significant Impact.** Construction of the Project would occur over a cumulative period of 6 months and would be entirely within the City of Livermore. Project construction would result in temporary increases in ambient noise levels. Onsite construction activities would require the use of two excavators and a loader that would generate varying noise levels. Offsite construction noise sources would consist of passing trucks and other construction-related vehicles. The City of Livermore’s Noise Ordinance regulates construction noise by limiting construction work that generates noise to between the hours of 7:00 a.m. and 8:00 p.m. Monday through Friday and 9:00 a.m. to 6:00 p.m. on Saturday, with no construction noise permitted on Sunday or holidays. As indicated in the Project Description, construction would occur only during normal working hours, or 8:00 a.m. to 5:00 p.m., Monday through Friday, or up to 10 hours per day throughout the construction period. Therefore, no conflicts would occur related to applicable local noise ordinances.

Although there are no applicable local noise level standards available to judge the significance of short-term daytime construction noise levels, the Federal Transit Administration has identified a daytime 1-hour L_{eq} ¹³ level of 90 dBA as a noise level where adverse community reaction could occur at residential land uses (FTA, 2006). This noise level is used here to assess whether daytime construction-related noise levels would cause a substantial temporary or periodic increase in ambient noise levels at sensitive receptor locations. It should also be noted that due to shelter-in-place restrictions in force at the time of this analysis attributable to the COVID-19 pandemic, actual field noise measurements or traffic counts were not conducted for this analysis. Therefore, the following analysis is based on data extrapolated from 2016 City traffic data with assumed

¹³ L_{eq} is the equivalent sound level used to describe noise over a specified period of time, in terms of a single numerical value. The L_{eq} is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

1 percent annual increases to represent current (2020) ambient conditions for noise modeling, as explained below.

Typical noise levels from equipment types that would be used to construct the Project are listed in **Table 3.2.13-1**. These values were used to determine if on-site construction noise activity levels at the nearest sensitive receptor locations would reach the 1-hour L_{eq} 90 dBA noise limit.

**TABLE 3.2.13-1
CONSTRUCTION EQUIPMENT NOISE LEVELS (50 FEET FROM SOURCE)**

Type of Equipment	L_{max} , dBA	Hourly L_{eq} , dBA/Usage%
Loader	79	75/40%
Excavator	81	77/40%

NOTES: L_{max} = maximum instantaneous noise level; L_{eq} = the equivalent sound level used to describe noise over a specified period of time, in terms of a single numerical value.

SOURCE: Federal Highway Administration, 2008. *FHWA Roadway Construction Noise Model, Version 1.1*, December 2008.

The operation of each piece of equipment would not be constant throughout the day, as equipment would be turned off when not in use. Over a typical workday, the equipment would be operating at different locations and all the equipment would not operate concurrently at the same location of the Project sites (i.e., Sites 1a, 1b, 2, and 3). To quantify construction-related noise exposure that would occur at the nearest sensitive receptors, it was assumed that the two loudest pieces of construction equipment would operate at the center of one of the Project sites. The combined L_{eq} noise level associated with the two loudest pieces of construction equipment (i.e., two excavators) would be approximately 80 dBA at 50 feet. The closest residential properties to the Project sites are along Rockrose Street, Sparrow Street, Summertree Drive, and Cottonwood Court, approximately 25 feet from the delineated Project work limit. Assuming the two excavators would operate concurrently 50 to 100 feet from the closest residences, the closest residences to the Project sites would be exposed to construction noise levels that would range between approximately 74 dBA to 80 dBA L_{eq} .

In addition to on-site construction equipment, the Project would result in short-term increases in local traffic volumes, resulting in higher traffic noise levels along local roadways. The Project would add a total of approximately 78 one-way daily construction-related vehicle trips to area roadways, including 48 heavy truck trips to import material and export debris from the Project sites. As shown on Figure 2-5, trucks would use haul routes that go through the neighborhoods north of the Projects sites and would pass in front of several residents to get to the site access points. To estimate the increase in vehicle traffic noise that would occur in the Project area, roadside noise levels associated with existing ambient conditions and with the Project were calculated for street segments in the Project area that may be used as haul routes near residences based on information provided in the traffic analysis (see Section 3.2.17, *Transportation*).

The traffic noise levels have been calculated using algorithms from the Federal Highway Administration’s Traffic Noise Prediction Model (FHWA-RD-77-108) and traffic volumes identified in the traffic analysis prepared for this Project. For a conservative analysis relative to the Project-related increase in traffic noise levels compared to ambient conditions, off-peak hour ambient traffic noise levels were estimated using hourly trips data provided by City of Livermore to find the percentage of the lowest hourly daytime trips relative to the total daily trips for each road segment (City of Livermore, 2020). The vehicle split for ambient conditions were estimated based on traffic count data collected for nearby North Livermore Avenue (HTC, 2020). Roadway segments that were analyzed were selected based on proximity to the Project site, availability of traffic data, and the presence of noise-sensitive land uses. For a conservative analysis, it was assumed that all Project-related trips would occur on each of the modelled roadways. The segments analyzed and the associated results of the modeling are shown in **Table 3.2.13-2**.

**TABLE 3.2.13-2
AMBIENT AND PROJECTED L_{eq} TRAFFIC NOISE LEVELS IN THE PROJECT VICINITY**

Roadway Segment	Distance to Closest Residences to the Project (feet)	Off-peak Hour Traffic Noise Levels at Nearby Residences, L_{eq} *		
		Ambient (2020)	Ambient Plus Project 2020	Incremental Increase
Isabel Avenue south of East Stanley Boulevard	300	64.8	65.0	0.2
North Murrieta Boulevard north of East Stanley Boulevard	70	64.2	64.9	0.7
East Stanley Boulevard west of Murrieta Boulevard	450	60.7	61.0	0.3
Olivina Avenue west of North Murrieta Boulevard	50	58.0	61.0	3.0

NOTE:

* Traffic noise levels were determined using methodology described in FHWA Traffic Noise Model Technical Manual.

SOURCE: ESA, 2020

As shown in Table 3.2.13-2, ambient traffic noise levels at residences in the vicinity of the Project sites and haul routes are estimated to be in the high-50 dBA to middle-60 dBA L_{eq} range, and ambient plus Project noise levels would result in an incremental increase of up to 3 dBA. Ambient traffic noise for the other roadways (i.e., Rockrose Street, Daisyfield Drive, and Hagemann Drive) that could be included in the haul route may be less than those shown in Table 3.2.13-2; however, even if there is no ambient traffic noise associated with those roadways, the short-term Project-related traffic L_{eq} levels would be up to approximately 58 dBA at residences along those roadways (ESA, 2020).

Project construction-related noise levels from on-site construction equipment and off-site vehicle trips would temporarily increase daytime ambient noise levels at nearby residences in the Project area, which are modelled to be between 58 and 65 dBA (see Table 3.2.13-2). Although the increased noise levels may be audible at the nearest sensitive receptor locations, the noise levels would be well below the applied 90 dBA L_{eq}

threshold. Therefore, the worst-case temporary increase in ambient noise levels from construction of the Project would cause an impact that would be less than significant and mitigation measures are not recommended.

Once construction is complete, long-term maintenance would be dependent on seasonal needs, but is assumed to mostly involve watering and weeding, which would not require the use of heavy equipment or require more than a few vehicle trips. Major repair activities would be episodic and occur only as-needed and cannot be reliably anticipated or scheduled. Long-term operation and maintenance related impacts would be less than significant and mitigation measures are not recommended.

- b) **Less than Significant Impact.** Vibration can be interpreted as energy transmitted as waves through the ground. These energy waves generally dissipate with distance from the vibration source. Since energy is lost during the transfer of energy from one particle to another, vibration attenuates rapidly with distance. Operations and maintenance of the Project would not include any sources of vibration that would be considered excessive. Groundborne vibration and noise associated with some construction activities, including the use of pile drivers, blasting, and jack hammers can cause excessive vibration. The Project would not include any such activities. Groundborne vibration and noise levels generated by the types of equipment required to construct the Project would be minimal and would not cause human annoyance or structure damage well beyond a distance of 25 feet from the source (FTA, 2006). No existing structures are located close enough to the Project site such that any damage related to groundborne vibration from construction activities would occur. This impact would be less than significant and mitigation measures are not recommended.
- c) **No Impact.** The Project is located approximately 1.2 miles southeast of the Livermore Municipal Airport and is within the airport influence area as determined by the *Livermore Municipal Airport Land Use Compatibility Plan (ALUCP)* (Alameda County, 2012). However, the proposed Project would not involve the development of noise-sensitive land uses that would be exposed to excessive aircraft noise. Workers that would construct the Project would be exposed to periodic short-term aircraft overflight noise associated with this airport; however, the average construction activity noise levels that the workers would be exposed to would be far greater than the average overflight noise levels that they would be exposed to. Therefore, there would be no impact.

Mitigation Measures

No mitigation measures are required.

References

Alameda County, 2012. *Livermore Municipal Airport Land Use Compatibility Plan*, August 2012.

City of Livermore, 2016. 2016 Average Daily Traffic Volume Map, May 2016. Available at: <http://www.cityoflivermore.net/civicax/filebank/documents/15379/>

City of Livermore, 2020. 2016 Hourly Traffic Count Data provided via e-mail from Joanna X.J. Liu, June 22, 2020.

Environmental Science Associates (ESA), 2020. Traffic Noise Estimates for Zone 7 Stanley Reach Project, June 19, 2020.

Federal Highway Administration (FHWA), 2008. FHWA Roadway Construction Noise Model, Version 1.1, December 2008.

Federal Transit Administration (FTA), 2006. *Transit Noise and Vibration Impact Assessment*. May 2006

Hexagon Transportation Consultants, Inc. (HTC), 2020. Chick-fil-A Restaurant on North Livermore Avenue, Traffic Impact Analysis, May 1 2020.

3.2.14 Population and Housing

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
XIV. POPULATION AND HOUSING — Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) **No Impact.** The Project would not include any new residential development or other infrastructure that would either directly or indirectly induce substantial unplanned population growth in the Project area. The Project would repair and restore the Stanley Reach flood control channel and does not remove any existing barriers to growth that has not been accounted for in the City of Livermore’s General Plan or other regional planning and forecasting documents. Therefore, the Project would not induce population growth and there would be no impact under this criterion.

- b) **No Impact.** The Project site is a flood control channel and does not contain an existing population or housing which would be displaced as a result of the repair and restoration of the channel’s intended function. Therefore, the Project would not necessitate for construction of replacement housing elsewhere and there would be no impact.

Mitigation Measures

No mitigation measures are required.

3.2.15 Public Services

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
XV. PUBLIC SERVICES —				
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 following public services:				
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a-i, ii) **Less than Significant Impact.** The Project would be limited to channel stabilization, enhancement measures, and riparian restoration and does not remove any existing barriers to growth that has not been accounted for in the City of Livermore’s General Plan or other regional planning and forecasting documents. Construction of the Project would involve over 2,000 truck trips and require up to 12 temporary workers during the construction season, which would contribute to additional temporary vehicle traffic on the roads as discussed in Section 2.5.4, *Haul Trips*, and shown on Figure 2-5, *Haul Routes and Staging Areas*. However, no temporary lane closures are anticipated during construction of the Project on adjacent roadways and a detailed traffic plan would be required by the City of Livermore for overweight vehicles. The Project would not result in a significant increase in traffic that would significantly impact response times or other performative objectives of fire and police protection services. For more details regarding traffic, haul routes, and truck trips, refer to Section 3.2.17, *Transportation*. Additionally, operation and maintenance of the Project would not require any additional new staff and would not disrupt fire or police service ratios further from existing during operation. The impact for fire and police response times would be less than significant under this criterion.

a-iii, iv, v) **No Impact.** The Project would not result in the need for expanded services related to school, parks, or other public facilities. As stated in the Section 3.2.14, *Population and Housing*, the Project would not directly or indirectly contribute to population growth. Construction of the Project would not involve alterations to any schools or parks that would result in a change to service ratios. Upon completion of Project construction, the repair and restoration sites would require minimal maintenance, consisting of annual project monitoring, water, weeding, etc. As described above, no new additional staff would be required as these maintenance activities would be performed by existing Zone 7

staff. Under this criterion, the Project would not result in a substantial adverse physical impact to schools, parks, other public services, and there would be no impact.

Mitigation Measures

No mitigation measures are required.

3.2.16 Recreation

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
XVI. RECREATION —				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) **No Impact.** Although the Project is designated as Open Space in the City of Livermore General Plan, the Project site is currently not accessible to the public or used as a recreational facility. However, several existing public trails are located adjacent to or near the Project site or access routes, such as trails along Isabel Avenue/Highway 84 and the historic channel of Arroyo Mocho (Arroyo Bike Trail) (LARPD, 2012). Truck traffic during construction could temporarily obstruct or interfere with public trails near Isabel Avenue, North Murrieta Boulevard, and East Stanley Boulevard. No temporary road closures are anticipated for the Project and temporary obstruction of surrounding existing recreational facilities from truck trips would be negligible. As a result, the Project would not cause a shift of use and increase the use of existing neighborhood and regional parks such that a substantial physical deterioration of the facility could occur and, therefore, would not be accelerated. There would be no impact under this criterion.

- b) **No Impact.** The Project would not include the construction or expansion of recreational facilities. However, the Project does include a restoration component that would increase the natural vegetation of the surrounding area and enhance the recreational experience for existing and proposed trails bordering the Project site. The Project would not involve a permanent adverse physical effect to the environment that would require the construction or expansion of additional recreational facilities. Following completion of the Project, the City of Livermore would implement the extension of the Iron Horse Trail which would be located directly south of the Project and involve use of Zone 7 maintenance trails. Under this criterion, the impact would be no impact.

Mitigation Measures

No mitigation measures are required.

References

Livermore Area Recreation and Park District (LARPD), 2012. Biking and Hiking Trails Map. Available online: <https://evogov.s3.amazonaws.com/134/media/97536.pdf>.

3.2.17 Transportation

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
XVII. TRANSPORTATION — Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

a) **Less than Significant Impact.**

Local and Regional Roadways

Construction of the Project would temporarily increase local traffic due to the transport and delivery of construction equipment and materials, as well as from daily worker trips. Regional access to the Project work sites would occur from I-580, with local access occurring via various roads, including Isabel Avenue (State Route 84), East Jack London Boulevard, East Stanley Boulevard, and North Murrieta Boulevard. Existing average daily traffic (ADT) on local roadways that provide access to the Project work sites are provided in **Table 3.2.17-1**. The most recent available ADT data, from May 2016 traffic counts, was provided by the City of Livermore (City of Livermore, 2016).¹⁴ In order to reflect existing 2020 conditions, traffic counts were adjusted using a 1 percent annual growth rate, which was determined in consultation with the City.¹⁵

**TABLE 3.2.17-1
EXISTING ADT ON STUDY AREA ROADWAYS**

Roadway Segment	2016 ADT	2020 ADT*
Isabel Avenue north of East Jack London Boulevard	45,332	47,173
Isabel Avenue south of East Stanley Boulevard	34,637	36,043
Murrieta Boulevard north of East Stanley Boulevard	17,621	18,336
East Stanley Boulevard west of North Murrieta Boulevard	29,527	30,726
East Jack London Boulevard east of Hagemann Drive	14,641	15,235

NOTE: * Estimated using 1 percent annual growth rate applied to traffic counts conducted in May 2016.

SOURCES: City of Livermore, 2016; ESA, 2020.

¹⁴ Due to the fact that COVID-19 has disrupted normal traffic patterns throughout the country, new traffic counts could not be conducted to represent existing 2020 conditions.

¹⁵ Telephone communication with Xiaojia (Joanna) Liu, Assistant Traffic Engineer at the City of Livermore, June 3, 2020.

As described in Chapter 2.5, *Project Construction*, Project construction is anticipated to occur during the 2021 and 2022 dry seasons (May through October), with all work completed by October 31, 2022. Construction would occur only during normal working hours, or 8 a.m. to 5 p.m., Monday through Friday. If allowed by City ordinance, the contractor may be onsite for up to 10 hours per day throughout the construction period. Construction activities would generate offsite traffic associated with the delivery of construction vehicles and equipment to the Project site, the daily arrival and departure of construction workers, and the delivery of materials throughout the construction period. A detailed traffic plan would be required by the City of Livermore for overweight vehicles. Construction staging would occur entirely within the Project site and would not require any temporary lane closures on adjacent roadways (i.e., Isabel Avenue, East Stanley Boulevard, North Murrieta Boulevard).

The Project would require up to 12 workers at the Project site at any given time, which includes equipment operators, a construction foreman, truck drivers, and laborers for traffic control and other tasks. Twelve workers would generate approximately 30 one-way vehicle trips per day (24 commute trips plus six midday trips [e.g., for lunch]). Hauling would require approximately 1,900 truck trips (estimated) for the gravel materials and approximately 1,154 truck trips for the rock materials, assuming truck capacities of 7 or 9 cubic yards, depending on the size/weight of the rock materials. With a six-month construction window, the off-haul and import would require an average of approximately 24 truck trips per day, or 48 one-way truck trips. The total daily trip generation (trucks plus workers) would be up to an average of 78 one-way vehicle trips.

Based on the existing ADT volumes on study area roadways shown in Table 3.2.7-1 and the estimated number of construction-related project trips described above (78 one-way trips), construction activities would increase the ADT volume on study area roadways by no more than 0.05 percent (i.e., too small of a change to be perceived by the average motorist). These changes in daily traffic are within the typical daily fluctuations experienced on roadways (plus or minus 5 percent) and therefore, do not represent a substantial increase in traffic. The percentage increase in traffic on I-580 would be even smaller, considering that volumes on freeways are much higher than those on local arterial roadways. Traffic increases on neighborhood roads (i.e., Hagemann Drive, Olivina Avenue, Daisyfield Drive, and Rockrose Street) shown in Figure 2-5, *Haul Routes and Staging Areas*, would be more noticeable, but considering the relatively small number of construction trips and the spreading of those trips over the course of the eight-hour workday, the roadways would continue to accommodate traffic within the roadways' carrying capacity with no discernable effect on operating conditions.

Once the Project is in operation, it is anticipated that no new staff would be employed specifically to operate or perform routine maintenance on the repaired/restored facilities. Maintenance is dependent on seasonal needs, but for the purposes of the transportation analysis it is anticipated to occur up to eight days per month and would mostly involve watering and weeding. Such activities would generate very few (i.e., less than five) worker and truck trips. Major repair activities would be episodic and occur only as-

needed and cannot be reliably anticipated or scheduled. Therefore, additional truck trips resulting from maintenance of repair and restoration sites in Stanley Reach would be minimal.

Based on the above discussion, construction and operation of the Project would result in less-than-significant impacts roadways.

Congestion Management Plan Facilities

Congestion management programs and level of service (LOS) standards established by congestion management agencies are intended to monitor and address long-term traffic conditions related to future development that generate permanent (on-going) traffic increases, and do not apply to temporary impacts associated with construction projects. Updated every two years, Alameda County's Congestion Management Program (CMP) aligns with the long-range Countywide Transportation Plan, the 2013 Regional Transportation Plan and Sustainable Communities Strategy, and other related efforts and legislative requirements.

As described above, following construction, traffic increases associated with Project operation and maintenance would be minimal and would only occur up to eight days per month. The Project would be operated and maintained by existing staff and would not require additional workers. Thus, there would not be a substantial increase in vehicle trips resulting from the Project. The impact to CMP facilities would be less than significant.

Public Transit, Bicycle, and Pedestrian Facilities

Tri-Valley Wheels, operated by the Livermore Amador Valley Transit Authority, provides bus service to the Project work sites. Route 10R (Rapid Route) travels between the East Dublin/Pleasanton BART Station and the Livermore Transit Center, with stops on the study roadway segment of East Stanley Boulevard west of North Murrieta Boulevard. Route 14 (Local Route) also travels between the East Dublin/Pleasanton BART Station and the Livermore Transit Center, with stops on the study roadway segments of Jack London Boulevard east of Hagemann Drive and North Murrieta Boulevard north of East Stanley Boulevard. Near the Project work sites, bicycle lanes are present on Jack London Boulevard, Stanley Boulevard, Hagemann Drive, Murrieta Boulevard south of Olivina Avenue, and Olivina Avenue between Hagemann Drive and Tanager Road. Pedestrian facilities consist of either sidewalks or shared-use paths (Arroyo Bike Trail) on all study area roadways.

The Project would neither directly nor indirectly eliminate existing or planned alternative transportation corridors or facilities (e.g., bike paths, lanes, etc.), including changes in policies or programs that support alternative transportation, nor construct facilities in locations for which future alternative transportation facilities may be planned. The City of Livermore has plans to use the southern maintenance access road owned by Zone 7, as an extension of the Iron Horse Trail, which is currently being constructed. The Iron Horse Trail project includes a new pedestrian bridge being constructed [as of April, 2020] over North Murrieta Boulevard and plans to utilize the southern maintenance access road for

recreational trail use. After this Project is completed, the City would pave the trail, likely in 2022. The Project would not conflict with the policies set forth in the East County Area Plan supporting alternative transportation (Alameda County, 2002). As described above, construction activities associated with the Project would not generate traffic volume increases that would significantly affect traffic flow on area roadways. The performance of public transit, bicycle and pedestrian facilities in the area likewise would not be adversely affected. This impact would be less than significant.

- b) **Less than Significant Impact.** In accordance with Senate Bill (SB) 743, the current CEQA Guidelines Section 15064.3, subdivision (b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the CEQA Guidelines criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas, and shifts the focus from driver delay (i.e., LOS) to reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses. Vehicle miles traveled, or VMT, is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person. The newly adopted guidance provides that a lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide. The City of Livermore is currently engaged in this process and has not yet formally adopted its updated transportation significance thresholds or its updated transportation impact analysis procedures. Since the regulations of SB 743 have not been finalized or adopted by the City, a qualitative traffic analysis focusing on vehicular delay was conducted in this IS/MND to determine the significance of transportation impacts (see impact discussion a, above).

In addition, Section 15064.3 of the CEQA Guidelines suggests that the analysis of VMT impacts applies mainly to land use and transportation projects. Furthermore, projects that generate or attract fewer than 110 operational trips per day would generally be exempt from further consideration with respect to VMT and impacts are assumed to be less than significant. Per this guidance, since the Project is neither a land use nor a transportation project, and would generate very few operational trips, it can be assumed to have a less-than-significant impact with respect to VMT.

- c) **Less than Significant Impact.** The Project would not introduce any new intersections or adjusted roadway geometry that would have the potential to introduce a hazardous driving condition. Additionally, as noted in Question a) above, the Project would not introduce a substantial number of large construction or delivery vehicles to area roadways during the construction phase. Furthermore, the City of Livermore's Engineer has identified ingress and egress limitations for access to the north and south sides of the channel, described in Chapter 2.5.4, *Haul Routes*, to safely accommodate truck turning movements into and out of the Project site. This impact would be less than significant.
- d) **Less than Significant Impact.** The Project would not change the configuration of the Project area's road network, and would not require temporary lane closures which would create reduced traffic capacity issues. As described in Question a) above, construction

would cause a less-than-significant increase in congestion on area roadways, though slow-moving construction-related vehicles could temporarily interfere with emergency response to the work site (e.g., emergency service vehicles traveling behind the slow-moving truck). However, all vehicles are required by law to yield to responding emergency vehicles that have warning apparatus in operation, and it is not considered likely that heavy construction-related traffic would result in inadequate emergency access. Adherence to existing traffic rules-of-the-road would ensure that the Project's construction impacts to emergency access would be less than significant.

Mitigation Measures

No mitigation measures are required.

References

Alameda County Community Development Agency, *East County Area Plan – Volume 1: Goals, Policies and Programs*, last amended in May 2002.

City of Livermore, 2018. Bicycle, Pedestrian, and Trails Map, June 11, 2018. Available at: <http://www.cityoflivermore.net/civicax/filebank/documents/7564>

City of Livermore, 2016. 2016 Average Daily Traffic Volume Map, May 2016. Available at: <http://www.cityoflivermore.net/civicax/filebank/documents/15379/>

Livermore Amador Valley Transit Authority, 2020. Tri-Valley Wheels Routes and Schedules, February 10, 2020. Available at: <https://www.wheelsbus.com/routes-and-schedules/>

3.2.18 Tribal Cultural Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
XVIII. TRIBAL CULTURAL RESOURCES —				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code 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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a.i-ii) **Less than Significant with Mitigation Incorporated.** Tribal cultural resources are: 1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing in the California Register of Historical Resources (California Register), or local register of historical resources, as defined in PRC Section 5020.1(k); or, 2) a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). For a cultural landscape to be considered a tribal cultural resource, it must be geographically defined in terms of the size and scope of the landscape (PRC Section 21074[b]). A historical resource, as defined in PRC Section 21084.1, unique archaeological resource, as defined in PRC Section 21083.2(g), or non-unique archaeological resource, as defined in PRC Section 21083.2(h), may also be a tribal cultural resource.

Through background research at the Northwest Information Center of the California Historical Resources Information System and a survey, no known archaeological resources that could be considered tribal cultural resources, listed or determined eligible for listing in the California Register, or included in a local register of historical resources as defined in PRC Section 5020.1(k), pursuant to PRC Section 21074(a)(1), would be impacted by the Project (NWIC, 2019; OHP, 2019b).

ESA sent a Sacred Lands File search request to the Native American Heritage Commission (NAHC) on January 16, 2019. ESA received a response from the NAHC on January 24, 2019 stating that the results of the record search of the Sacred Lands File

were negative for Native American cultural sites in the vicinity. The NAHC provided a list of Native American representatives to contact who may have information regarding known and/or recorded sites.

For previous Zone 7 bank repair projects, Zone 7 representatives met with Katherine Erolinda Perez from the Nototomne Cultural Preservation Northern Valley Yokut/Ohlone/Bay Miwuk. Ms. Perez was shown five bank repair work locations, including a work location on Line G (Arroyo Mocho). Ms. Perez requested that during additional phases of work along the Zone 7 channels the tribe receive cultural resources documentation to assess the potential need for Native American monitoring or other protection strategies. On March 20, 2019, on behalf of Zone 7, ESA sent a letter describing the Project and a map showing the Project location to the tribes on the NAHC list. No responses have been received.

Zone 7 determined that no tribal cultural resource pursuant to criteria set forth in PRC Section 5024.1(c) could potentially be affected by the proposed project. If any previously unrecorded archaeological resource were identified during ground-disturbing construction activities and were found to qualify as a tribal cultural resource pursuant to PRC Section 21074(a)(1) (determined to be eligible for listing in the California Register or in a local register of historical resources), any impacts to the resource resulting from the Project could be potentially significant. Any such potential significant impacts would be reduced to a less-than-significant level by implementing **Mitigation Measure CUL-1**. This mitigation measure would ensure that work halt in the vicinity of a find until a qualified archaeologist can make an assessment and provide additional recommendations if necessary, including contacting Native American tribes.

Mitigation Measures

Mitigation Measure CUL-1: Inadvertent Discovery of Cultural Resources.

Please refer to Section 3.2.5, *Cultural Resources*, for full description of Mitigation Measure CUL-1.

References

Northwest Information Center (NWIC), Records Search File No. 18-1302. On file, ESA, January 15, 2019.

Office of Historic Preservation (OHP), Section 106 Consultation for the Arroyo Mocho Stanley Reach Stabilization Project in Livermore, Alameda County, California (Corps File No. 2013-00078S). July 1, 2019b.

3.2.19 Utilities and Service Systems

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
XIX. UTILITIES AND SERVICE SYSTEMS —				
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) **Less than Significant Impact.** The Project would be limited to the repair of the Stanley Reach flood control channel, including channel stabilization, enhancement measures, and riparian restoration. The Project would not include the installation of new stormwater drainage facilities, or relocate or expand such facilities. Construction of the Project intends to restore flood control functionality, sediment management, groundwater recharge capabilities to pre-2017 conditions, and inherently improve stormwater drainage for the City of Livermore. Relocation or construction of new or expanded water, wastewater treatment, electric power, natural gas, or telecommunication facilities would not be included in components of the Project. Therefore, the impact of the Project would be less than significant.

- b) **Less than Significant Impact.** As stated above, the Project would not require or result in the relocation or construction of any new or additional sources of water. However, a water truck would be used onsite and dewatering could occur during periods of low flow. In the summer months, the water in Arroyo Mocho and Stanley Reach typically consists of artificial recharge of the groundwater basin from the South Bay Aqueduct as available from the Department of Water Resources (DWR). In the summer when DWR water is available, flows are released from upstream dams to facilitate groundwater recharge through the gravel bed channels and into the recharge ponds, referred to by Zone 7, as the “Chain of Lakes”, which is located downstream and west of the Project site. Depending on groundwater recharge needs, up to 5 cubic feet per second (cfs) could be released and would flow through the Stanley Reach. If the groundwater basin is full, Zone 7 does not request releases

to the Arroyo Mocho from DWR and ensure that the basin is reasonably maintained. Construction of the Project would not significantly deplete water supplies during normal, dry, or multiple dry years. Under this criterion, the impact would be less than significant.

- c) **Less than Significant Impact.** Construction, operation, and maintenance of the Project would not require permanent wastewater treatment. Portable toilets would be provided onsite for the estimated 12 construction workers for approximately 6 months. The Livermore Water Reclamation Plant (LWRP) would be the closest facility provide service to the Project. The LWRP currently processes over 6 million gallons of wastewater each day from throughout the Livermore area and would be able to provide substantial service and maintain adequate capacity for the Project. The LWRP has a design capacity of 8.5 million gallons per day (City of Livermore, 2020). Therefore, the Project needs during construction would be negligible for wastewater treatment comparatively to the service capacity of LWRP and the impact would be less than significant.
- d, e) **No Impact.** As discussed in Section 2.4, *Proposed Project*, the Project would require removal of 10,750 cy of deposited alluvium material and 2,450 cy of rock material. It is anticipated that to the extent possible, excess materials (i.e. rocks, bed material) currently onsite would be salvaged and reused onsite. However, unusable material would be hauled to an offsite stockpile managed by Zone 7, a local quarry for reuse, or to a local landfill such as the Vasco Road Landfill on Vasco Road in Livermore. Sediment and small gravel would be re-purposed by Zone 7 within their service area for upland repairs, like maintenance roads. The Altamont Landfill currently has 65,400,00 cubic yards of remaining capacity and accepts ash, construction demolition, contaminated soil, green materials, industrial, and mixed municipal type waste (CalRecycle, 2019). All rock materials would be recycled or disposed of in compliance with all federal, state, and local regulations. No waste would be created or disposed of during operation and maintenance of the Project. Under this criterion, there would be no impact.

Mitigation Measures

No mitigation measures are required.

References

CalRecycle, 2019. SWIS Facility/Site Search. Available online: <https://www2.calrecycle.ca.gov/SWFacilities/Directory/>.

City of Livermore, 2020. Livermore Water Reclamation Plant. Available at: http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/water_reclamation_plant/lwrp.htm#:~:text=The%20Livermore%20Water%20Reclamation%20Plant,treatment%20processes%2C%20and%20UV%20disinfection. Accessed June 17, 2020.

3.2.20 Wildfire

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
XX. WILDFIRE — If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The Project site is not located within a State Responsibility Area (SRA)¹⁶ and is not classified as a Very High Fire Hazard Severity Zone (VHFHSZ). As a result, the Project site fire responsibility is zoned as a Local Responsibility Area (LRA)¹⁷ by California Department of Forestry and Fire Protection (CAL FIRE) and is classified as a Non-VHFHSZ (CAL FIRE, 2007a; CAL FIRE, 2008). Only lands zoned as a VHFHSZ are identified within local responsibility areas (CAL FIRE, 2007c).

Discussion

- a) **No Impact.** According to the City of Livermore Emergency Operations Plan (EOP), the Livermore-Pleasanton Fire Department (LPPFD) actively enforces code and ordinances to ensure a reasonable degree of fire safety for facilities anticipated for occupancy in order to minimize the threat to life and property (City of Livermore, 2018). The Project would not construct any facilities for occupancy and, therefore, would not interfere or impair any emergency response plan enforced by LPPFD. Additionally, no evacuation plans or routes are outlined in the EOP or the General Plan. Under this criterion there would be no impact.
- b) **Less than Significant with Mitigation Incorporated.** Project construction would require multiple vehicle trips and use of heavy machinery that could result in a potential

¹⁶ State Responsibility Area is a legal term defining the area where the State has financial responsibility for wildland fire protection. Incorporated cities and federal ownership are not included. The prevention and suppression of fires in all areas that are not state responsibility areas are primarily the responsibility of local or federal agencies (CAL FIRE, 2007b).

¹⁷ Local Responsibility Areas include incorporated cities, cultivated agriculture lands, and portions of the desert. Local responsibility area fire protection is typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract to local government (CAL FIRE, 2007b).

- spark or ignition source for surrounding vegetation. The Project site does not contain substantial fuel (vegetation), steep slope, or prevailing winds substantial enough to support a significant spread of wildfire outside the immediate construction area. However, due to the proximity of residents surrounding the area and the likelihood of exposure to pollutants if a wildfire were to occur, **Mitigation Measure WIL-1** would be implemented to reduce the impact of a fire during construction. Implementation of WIL-1 would ensure that the Project would not significantly exacerbate wildfire risks or expose any residents to pollutant concentrations or the uncontrollable spread of a wildfire. Under this criterion, the impact would be less than significant with mitigation incorporated.
- c) **No Impact.** The Project would not result or require the installation or maintenance of any new access roads, fuel breaks, emergency water sources, power lines, or other utilities that would exacerbate fire risk or result in temporary ongoing impacts to the environment. Under this criterion, there would be no impact.
- d) **No Impact.** As discussed above in Question b, the Project does not support factors that would contribute to a significant wildfire risk, such as steep vegetative slopes. Therefore, the likelihood of the Project to expose surrounding 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 would be minimal to none. Under this criterion, there would be no impact.

Mitigation Measures

Mitigation Measure WIL-1: Fire Safety Practices.

Zone 7 shall require the construction contractor to ensure that the following fire safety construction practices are implemented:

- Earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildland fire;
- Appropriate fire suppression equipment shall be maintained at the construction site;
- Flammable materials shall be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame; and
- Construction personnel shall be trained in fire safe work practices, use of fire suppression equipment, and procedures to follow in the event of a fire.

References

CAL FIRE, 2007a. Fire Hazard Severity Zones in SRA. Adopted by CAL FIRE on November 7, 2007. Available online: https://osfm.fire.ca.gov/media/7271/fhszs_map1.pdf.

CAL FIRE, 2007b. Frequently Ask Questions About: Fire Hazard Severity Zoning and New Building Codes for California's Wildland-Urban Interface. Available online: https://www.sccgov.org/sites/dpd/DocsForms/Documents/FIRE_CAL_WUI_FAQs.pdf

CAL FIRE, 2007c. California's Fire Hazard Severity Zones. California Department of Forestry and Fire Protection Office of the State Fire Marshal. May, 2007. Available online: https://www.sccgov.org/sites/dpd/DocsForms/Documents/Fire_Hazard_Zone_Fact_Sheet.pdf.

CAL FIRE, 2008. Very High Fire Hazard Severity Zones in LRA. As Recommended by CAL FIRE. September, 2008. Available online: https://osfm.fire.ca.gov/media/6638/fhszl_map1.pdf.

City of Livermore, 2018. City of Livermore Emergency Operations Plan. January 2018. Available online: <http://www.cityoflivermore.net/civicax/filebank/documents/17883/>

3.2.21 Mandatory Findings of Significance

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
XXI. MANDATORY FINDINGS OF SIGNIFICANCE —				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

- a, c) **Less than Significant with Mitigation Incorporated.** The analysis presented in this Initial Study has identified a number of potentially significant environmental impacts attributable to the Project. To reduce these impacts, a number of mitigation measures are proposed that will be included in the Project’s Mitigation Monitoring and Reporting Program (MMRP) upon adoption of this Mitigated Negative Declaration and approval of the Project. As required by CEQA, these mitigation measures are required to be implemented as directed herein. With implementation of the mitigation measures presented herein, the Project does not have the potential to degrade the quality of the environment, including fish or wildlife species or their habitat, plant or animal communities, important examples of the major periods of California history or prehistory, or adverse effects on human beings. These impacts would be less than significant with mitigation.
- b) **Less than Significant with Mitigation Incorporated.** A cumulative impact refers to the combined effect of “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines Section 15355). As defined by the State of California, cumulative impacts reflect “the change in the environment which results from the incremental impact of the Proposed Project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time” (CEQA Guidelines Section 15355[b]).

Consideration of past, present, and reasonably foreseeable projects in the Project area and vicinity indicate that the proposed Zone 7 Stanley Reach Stabilization Project would have a less than significant cumulative impact. Planned projects or areas anticipated for future build-out within the vicinity, or projects that are of a similar nature along Arroyo Mocho, include the following:

- Stanley Boulevard Widening, CIP Project No. 200851 – Widen Stanley Boulevard from 4 to 6 lanes between Murrieta Boulevard and west city limits. The roadway would be widened to the north and the bridge over Arroyo Mocho would be widened. Programmed in City capital improvements program for fiscal years 2019-2035.
- Iron Horse Trail Extension and bridge, CIP Project No. 200651. To extend the regional Iron Horse Trail from downtown Livermore to the west city limits, the City proposes to construct a public multi-use pedestrian/bicycle bridge over North Murrieta Boulevard south of the Union Pacific Railroad tracks. When the Stanley Reach Stabilization Project is completed, the City would continue the trail extension project westward by paving the Stanley Reach southern maintenance access road for recreational trail use.
- Arroyo Mocho Medeiros Reach Floodplain Reconnection Project. This Zone 7 project along the 0.7-mile-long Medeiros Reach would involve 40 acres along the invasive species control activities on 40 adjacent acres, as well as reconnecting 15 acres of floodplain by lowering the Arroyo Trail and improving existing trails. This project is currently in regulatory review.
- Hyatt House, 1000 Airway Boulevard at Livermore Municipal Airport. An existing hotel would be demolished and the site would be redeveloped with a four-story hotel with 176 guest rooms. Currently under planning review (as of February, 2020).
- Oak Business Park – located northwest of Stanley Reach and directly west of Isabel Avenue, between Livermore Municipal Airport and East Stanley Boulevard. Permitted uses within the Oak Business Park zoning district includes industrial and office uses. The parcel at the southwest corner of Jack London and Isabel Avenue (1201 Voyager Street) was recently developed with an approximately 372,500-square-foot warehouse distribution building including ancillary assembly and 29,000 square feet of office uses (City of Livermore, 2020). Also within this zoning district is FM Industries, 300 Discovery Drive project. This 83,821-square-foot industrial building is currently under construction (as of February, 2020).

The proposed haul routes for the Project is from I-580 to Isabel Avenue/Highway 580 to Patterson Pass Road to either East Jack London Boulevard or East Stanley Boulevard/North Murrieta Boulevard and local residential street from those roadways. The Hyatt House and the FM Industries, 300 Discovery Drive projects are under construction (as of February 14, 2020) by the City and would most likely use Isabel Avenue/Highway 84 for construction and worker access, which would be the primary access site for the Project. The East Stanley Boulevard widening and Iron Horse Trail extension and bridge would also affect roadways to be used as construction access for the Project. Based on the existing ADT volumes on study area roadways shown in Table 3.2.17-1 and the estimated number of construction-related project trips (76 one-way trips), construction activities would increase the ADT volume on study area roadways by no more than 0.05 percent – too small of a change to be

perceived by the average motorist. Also, a detailed traffic plan would be required by the City of Livermore for overweight vehicles to limit potential vehicular conflicts on area roadways. It is assumed the cumulative projects would also be required to implement such a plan if they require use of overweight vehicles. Finally, while East Stanley Boulevard would be a primary access route for the Project and the widening project has been programmed in the City's CIP, construction dates have not been set for the work to begin. Therefore, its affect relative to the Stanley Reach Project is unknown at this time. Based on the small percent increase in traffic generated by Project construction, as well as compliance with City requirements, the Project's impact to traffic in this area would not be cumulatively considerable.

The Arroyo Mocho Medeiros Reach is upstream in the same watershed on the same stream. Like the Stanley Reach stabilization project, it would be constructed during the dry season when there is little or no flow in Arroyo Mocho. The period of active construction that would affect the stream itself at Medeiros Reach (i.e., August to October) would be about half that of the Stanley Reach project (Zone 7, 2019). While construction access routes for the Medeiros Reach project would overlap those for the Stanley Reach project, as noted in the previous paragraph, construction-related traffic generated by the Stanley Reach project would be less than 1.0 percent of the existing ADT volumes. The CEQA analysis performed for the Medeiros Reach project indicates it would generate eight to 10 trip per day (Zone 7, 2019), which is less than 15 percent than that of the Stanley Reach project and would contribute a much lower percentage to existing ADT volumes. As both projects would be constructed when there would be little or no flow in Arroyo Mocho and, combined, would contribute a less than 1.0 percent increase to existing ADT volumes during an overlapping construction period of three months, the effects of the Stanley Reach impact to Arroyo Mocho would not be cumulatively considerable.

The Project would not have impacts to agriculture or forestry resources, land use and planning, mineral resources, population and housing, or recreation that would combine with other projects. The proposed activities could have impacts with respect to aesthetics, biological and cultural resources, energy, geology, soils, seismicity, paleontological resources, hazards and hazardous materials, hydrology and water quality, noise, transportation and traffic, tribal cultural resources, utilities and service systems, and wildfire. However, such impacts would be limited to the Project site and, where necessary, mitigated such that they would not substantially combine with other off-site impacts.

However, the Project's potential construction impacts with respect to air quality and GHG emissions could extend beyond the site to combine with impacts from other projects. As described in above in Air Quality and Greenhouse Gas Emissions, BAAQMD considered the emission levels at which a project's individual emissions would be cumulatively considerable in developing its CEQA significance thresholds. BAAQMD considers projects that result in emissions that exceed its CEQA significance thresholds to result in individual impacts that are cumulatively considerable and

significant. As discussed in these sections, the Project’s emissions would be limited to the construction period and to periodic testing of the proposed emergency standby generator at the ozonation plant during operations and would be below BAAQMD’s cumulatively considerable threshold. This impact would be less than significant.

Mitigation Measures

The following mitigation measures will be implemented to ensure that the Project would not have a cumulative effect on the environment when considered together with other projects. The full text of these measures is found in the respective resource analysis in this Initial Study.

Mitigation Measure AQ-1: Implement BAAQMD Basic Construction Mitigation Measures.

Mitigation Measure BIO-1: Preconstruction Surveys and Worker Training.

Mitigation Measure BIO-2: Pre-Construction Bird Surveys.

Mitigation Measure BIO-3: Avoid, Minimize and Mitigate for Impacts to Wetlands and Waters.

Mitigation Measure CUL-1: Inadvertent Discovery of Cultural Resources.

Mitigation Measure CUL-2: Inadvertent Discovery of Human Remains.

Mitigation Measure GEO-1: Inadvertent Discovery of Paleontological Resources.

Mitigation Measure WIL-1: Fire Safety Practices.

References

Alameda County Flood Control and Water Conservation District, Zone 7 (Zone 7), 2019. *Arroyo Mocho Medeiros Reach Floodplain Reconnection Project*. Prepared by Horizon Water and Environment, et al. February.

Livermore, City of, Community Development Department, 2020. *Summary of Major Development Projects*. February 14.

Livermore, City of, 2015. *20 Year Capital Improvement Plan with Appropriations for FY 2015-16 and FY 2016-17*. June 1.

Livermore, City of, 2020. Email correspondence with Jake Potter. City of Livermore Community Development Department. April 27, 2020.

CHAPTER 4

Report Preparers

4.1 Lead Agency

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Bailey Setzler	<i>Air Quality, Greenhouse Gas Emissions</i>
Sarah Patterson	<i>Air Quality (Health Risk Assessment)</i>
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Heidi Koenig, RPA	<i>Cultural and Tribal Cultural Resources</i>
Brandon Carroll	<i>Geology, Soils and Paleontology, Mineral Resources, Hydrology and Water Quality</i>
Alena Maudru	<i>Noise</i>
Shadde Rosenblum	<i>Transportation and Traffic</i>

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Appendix A

Air Quality and Greenhouse Gas Emissions Estimates

A-1 CalEEMod Output & Emissions Calculations

Stanley Reach Repairs_Export Haul - Alameda County, Annual

Stanley Reach Repairs_Export Haul
Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	3.01	Acre	3.01	131,680.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - PG&E GHG emission factor based on <http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf>

Land Use - From PD

Construction Phase - Schedule from PD. Assume 10 days demo of control structure.

Off-road Equipment - No arch coating

Off-road Equipment - No Building construction

Off-road Equipment - From equipment list

Off-road Equipment - From equipment list

Off-road Equipment - From equipment list

Off-road Equipment - No paving

Off-road Equipment - No site-prep

Trips and VMT - Haul trips account for 17,100 cy materials/9 cy truck capacity = 1,900 round trips= 3,800 1-way trips allocated to each phase by phase length.

Demolition -

Grading -

Vehicle Trips - Assume 1 employee needed for maintenance maximum of 8 days per month

Energy Use -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	8.00	60.00
tblConstructionPhase	NumDays	8.00	60.00
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	NumDays	5.00	0.00
tblGrading	MaterialExported	0.00	8,550.00

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tblGrading	MaterialExported	0.00	8,550.00
tblGrading	MaterialImported	0.00	4,544.00
tblGrading	MaterialImported	0.00	4,544.00
tblLandUse	LandUseSquareFeet	131,115.60	131,680.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210

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tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripNumber	1,637.00	1,754.00
tblTripsAndVMT	HaulingTripNumber	22.00	292.00
tblTripsAndVMT	HaulingTripNumber	1,637.00	1,754.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	22.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	13.00	24.00
tblTripsAndVMT	WorkerTripNumber	55.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	24.00
tblTripsAndVMT	WorkerTripNumber	13.00	24.00
tblTripsAndVMT	WorkerTripNumber	11.00	0.00
tblVehicleTrips	ST_TR	22.75	0.53
tblVehicleTrips	SU_TR	16.74	0.53
tblVehicleTrips	WD_TR	1.89	0.53

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-1-2021	7-31-2021	1.0119	1.0119
2	8-1-2021	10-31-2021	0.5175	0.5175
		Highest	1.0119	1.0119

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.8000e-004	2.2900e-003	4.0600e-003	2.0000e-005	1.2700e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.4872	1.4872	6.0000e-005	0.0000	1.4887
Waste						0.0000	0.0000		0.0000	0.0000	0.0528	0.0000	0.0528	3.1200e-003	0.0000	0.1308
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.1957	1.1957	1.7000e-004	3.0000e-005	1.2100
Total	1.6200e-003	2.2900e-003	4.0900e-003	2.0000e-005	1.2700e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0528	2.6829	2.7357	3.3500e-003	3.0000e-005	2.8295

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.8000e-004	2.2900e-003	4.0600e-003	2.0000e-005	1.2700e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.4872	1.4872	6.0000e-005	0.0000	1.4887
Waste						0.0000	0.0000		0.0000	0.0000	0.0528	0.0000	0.0528	3.1200e-003	0.0000	0.1308
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.1957	1.1957	1.7000e-004	3.0000e-005	1.2100
Total	1.6200e-003	2.2900e-003	4.0900e-003	2.0000e-005	1.2700e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0528	2.6829	2.7357	3.3500e-003	3.0000e-005	2.8295

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	5/1/2021	7/23/2021	5	60	
2	Site Preparation	Site Preparation	5/29/2021	5/28/2021	5	0	
3	Building Construction	Building Construction	6/17/2021	6/16/2021	5	0	
4	Demolition	Demolition	7/24/2021	8/6/2021	5	10	
5	Grading2	Grading	8/7/2021	10/29/2021	5	60	
6	Paving	Paving	5/5/2022	5/4/2022	5	0	
7	Architectural Coating	Architectural Coating	5/31/2022	5/30/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading2	Excavators	2	8.00	158	0.38
Grading2	Graders	0	8.00	187	0.41
Grading2	Rubber Tired Dozers	0	8.00	247	0.40
Grading2	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	6.00	132	0.36
Paving	Rollers	0	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	5	24.00	3.00	1,754.00	10.80	7.30	7.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	10.80	7.30	0.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	0.00	0.00	0.00	10.80	7.30	0.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	24.00	2.00	292.00	10.80	7.30	7.00	LD_Mix	HDT_Mix	HHDT
Grading2	5	24.00	3.00	1,754.00	10.80	7.30	7.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	10.80	7.30	0.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	0.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.4000e-004	0.0000	7.4000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.2998	0.3997	5.9000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	51.7935	51.7935	0.0168	0.0000	52.2122
Total	0.0306	0.2998	0.3997	5.9000e-004	7.4000e-004	0.0163	0.0171	1.1000e-004	0.0150	0.0151	0.0000	51.7935	51.7935	0.0168	0.0000	52.2122

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3.2 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.4400e-003	0.1363	0.0216	3.0000e-004	5.2100e-003	2.8000e-004	5.4900e-003	1.4400e-003	2.7000e-004	1.7000e-003	0.0000	29.1247	29.1247	2.2900e-003	0.0000	29.1821
Vendor	2.8000e-004	9.6300e-003	2.0400e-003	2.0000e-005	5.9000e-004	2.0000e-005	6.1000e-004	1.7000e-004	2.0000e-005	1.9000e-004	0.0000	2.3577	2.3577	1.3000e-004	0.0000	2.3610
Worker	2.3000e-003	1.6400e-003	0.0172	5.0000e-005	5.6900e-003	4.0000e-005	5.7300e-003	1.5100e-003	4.0000e-005	1.5500e-003	0.0000	4.8850	4.8850	1.2000e-004	0.0000	4.8879
Total	6.0200e-003	0.1476	0.0408	3.7000e-004	0.0115	3.4000e-004	0.0118	3.1200e-003	3.3000e-004	3.4400e-003	0.0000	36.3674	36.3674	2.5400e-003	0.0000	36.4309

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.3000e-004	0.0000	3.3000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.2998	0.3997	5.9000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	51.7934	51.7934	0.0168	0.0000	52.2122
Total	0.0306	0.2998	0.3997	5.9000e-004	3.3000e-004	0.0163	0.0167	5.0000e-005	0.0150	0.0151	0.0000	51.7934	51.7934	0.0168	0.0000	52.2122

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3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.5 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4200e-003	0.0000	2.4200e-003	3.7000e-004	0.0000	3.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-003	0.0500	0.0666	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.6322	8.6322	2.7900e-003	0.0000	8.7020
Total	5.1000e-003	0.0500	0.0666	1.0000e-004	2.4200e-003	2.7200e-003	5.1400e-003	3.7000e-004	2.5000e-003	2.8700e-003	0.0000	8.6322	8.6322	2.7900e-003	0.0000	8.7020

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3.5 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.7000e-004	0.0227	3.5900e-003	5.0000e-005	8.7000e-004	5.0000e-005	9.1000e-004	2.4000e-004	4.0000e-005	2.8000e-004	0.0000	4.8486	4.8486	3.8000e-004	0.0000	4.8581
Vendor	3.0000e-005	1.0700e-003	2.3000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2620	0.2620	1.0000e-005	0.0000	0.2623
Worker	3.8000e-004	2.7000e-004	2.8600e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8142	0.8142	2.0000e-005	0.0000	0.8147
Total	9.8000e-004	0.0240	6.6800e-003	6.0000e-005	1.8900e-003	6.0000e-005	1.9400e-003	5.1000e-004	5.0000e-005	5.6000e-004	0.0000	5.9247	5.9247	4.1000e-004	0.0000	5.9351

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0900e-003	0.0000	1.0900e-003	1.6000e-004	0.0000	1.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-003	0.0500	0.0666	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.6322	8.6322	2.7900e-003	0.0000	8.7020
Total	5.1000e-003	0.0500	0.0666	1.0000e-004	1.0900e-003	2.7200e-003	3.8100e-003	1.6000e-004	2.5000e-003	2.6600e-003	0.0000	8.6322	8.6322	2.7900e-003	0.0000	8.7020

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3.5 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.7000e-004	0.0227	3.5900e-003	5.0000e-005	8.7000e-004	5.0000e-005	9.1000e-004	2.4000e-004	4.0000e-005	2.8000e-004	0.0000	4.8486	4.8486	3.8000e-004	0.0000	4.8581
Vendor	3.0000e-005	1.0700e-003	2.3000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2620	0.2620	1.0000e-005	0.0000	0.2623
Worker	3.8000e-004	2.7000e-004	2.8600e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8142	0.8142	2.0000e-005	0.0000	0.8147
Total	9.8000e-004	0.0240	6.6800e-003	6.0000e-005	1.8900e-003	6.0000e-005	1.9400e-003	5.1000e-004	5.0000e-005	5.6000e-004	0.0000	5.9247	5.9247	4.1000e-004	0.0000	5.9351

3.6 Grading2 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.4000e-004	0.0000	7.4000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.2998	0.3997	5.9000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	51.7935	51.7935	0.0168	0.0000	52.2122
Total	0.0306	0.2998	0.3997	5.9000e-004	7.4000e-004	0.0163	0.0171	1.1000e-004	0.0150	0.0151	0.0000	51.7935	51.7935	0.0168	0.0000	52.2122

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3.6 Grading2 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.4400e-003	0.1363	0.0216	3.0000e-004	5.2100e-003	2.8000e-004	5.4900e-003	1.4400e-003	2.7000e-004	1.7000e-003	0.0000	29.1247	29.1247	2.2900e-003	0.0000	29.1821
Vendor	2.8000e-004	9.6300e-003	2.0400e-003	2.0000e-005	5.9000e-004	2.0000e-005	6.1000e-004	1.7000e-004	2.0000e-005	1.9000e-004	0.0000	2.3577	2.3577	1.3000e-004	0.0000	2.3610
Worker	2.3000e-003	1.6400e-003	0.0172	5.0000e-005	5.6900e-003	4.0000e-005	5.7300e-003	1.5100e-003	4.0000e-005	1.5500e-003	0.0000	4.8850	4.8850	1.2000e-004	0.0000	4.8879
Total	6.0200e-003	0.1476	0.0408	3.7000e-004	0.0115	3.4000e-004	0.0118	3.1200e-003	3.3000e-004	3.4400e-003	0.0000	36.3674	36.3674	2.5400e-003	0.0000	36.4309

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.3000e-004	0.0000	3.3000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.2998	0.3997	5.9000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	51.7934	51.7934	0.0168	0.0000	52.2122
Total	0.0306	0.2998	0.3997	5.9000e-004	3.3000e-004	0.0163	0.0167	5.0000e-005	0.0150	0.0151	0.0000	51.7934	51.7934	0.0168	0.0000	52.2122

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3.8 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.8000e-004	2.2900e-003	4.0600e-003	2.0000e-005	1.2700e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.4872	1.4872	6.0000e-005	0.0000	1.4887
Unmitigated	3.8000e-004	2.2900e-003	4.0600e-003	2.0000e-005	1.2700e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.4872	1.4872	6.0000e-005	0.0000	1.4887

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.60	1.60	1.60	3,406	3,406
Total	1.60	1.60	1.60	3,406	3,406

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.561348	0.038614	0.190285	0.107199	0.015389	0.005180	0.024554	0.046236	0.002209	0.002456	0.005491	0.000334	0.000704

5.0 Energy Detail

Historical Energy Use: N

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5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005
Unmitigated	1.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005
Total	1.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005
Total	1.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005

7.0 Water Detail

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7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.1957	1.7000e-004	3.0000e-005	1.2100
Unmitigated	1.1957	1.7000e-004	3.0000e-005	1.2100

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 3.58636	1.1957	1.7000e-004	3.0000e-005	1.2100
Total		1.1957	1.7000e-004	3.0000e-005	1.2100

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 3.58636	1.1957	1.7000e-004	3.0000e-005	1.2100
Total		1.1957	1.7000e-004	3.0000e-005	1.2100

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0528	3.1200e-003	0.0000	0.1308
Unmitigated	0.0528	3.1200e-003	0.0000	0.1308

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.26	0.0528	3.1200e-003	0.0000	0.1308
Total		0.0528	3.1200e-003	0.0000	0.1308

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.26	0.0528	3.1200e-003	0.0000	0.1308
Total		0.0528	3.1200e-003	0.0000	0.1308

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	3.01	Acre	3.01	131,680.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	210	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - PG&E GHG emission factor based on <http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf>

Land Use - From PD

Construction Phase - Schedule from PD. Assume 10 days demo of control structure.

Off-road Equipment - No arch coating

Off-road Equipment - No bldg construction

Off-road Equipment - From equipment list

Off-road Equipment - From equipment list

Off-road Equipment - From equipment list

Off-road Equipment - No paving

Off-road Equipment - No site prep

Trips and VMT - Haul trips account for 4545 cy materials/9 cy truck capacity + 4543cy materials/7cy truck capacity = 1154 total haul trips

Demolition -

Grading -

Vehicle Trips - Assume 1 employee needed for maintenance maximum of 8 days per month

Energy Use -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	8.00	60.00
tblConstructionPhase	NumDays	8.00	60.00
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	NumDays	5.00	0.00
tblGrading	MaterialExported	0.00	8,550.00

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tblGrading	MaterialExported	0.00	8,550.00
tblGrading	MaterialImported	0.00	4,544.00
tblGrading	MaterialImported	0.00	4,544.00
tblLandUse	LandUseSquareFeet	131,115.60	131,680.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00

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tblOffRoadEquipment	PhaseName		Demolition
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblTripsAndVMT	HaulingTripLength	20.00	45.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	45.00
tblTripsAndVMT	HaulingTripLength	20.00	45.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripNumber	1,637.00	1,066.00
tblTripsAndVMT	HaulingTripNumber	22.00	178.00
tblTripsAndVMT	HaulingTripNumber	1,637.00	1,066.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	22.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	13.00	24.00
tblTripsAndVMT	WorkerTripNumber	55.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	24.00
tblTripsAndVMT	WorkerTripNumber	13.00	24.00
tblTripsAndVMT	WorkerTripNumber	11.00	0.00
tblVehicleTrips	ST_TR	22.75	0.53
tblVehicleTrips	SU_TR	16.74	0.53
tblVehicleTrips	WD_TR	1.89	0.53

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-1-2021	7-31-2021	1.2699	1.2699
2	8-1-2021	10-31-2021	0.6528	0.6528
		Highest	1.2699	1.2699

2.2 Overall Operational
Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.8000e-004	2.2900e-003	4.0600e-003	2.0000e-005	1.2700e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.4872	1.4872	6.0000e-005	0.0000	1.4887
Waste						0.0000	0.0000		0.0000	0.0000	0.0528	0.0000	0.0528	3.1200e-003	0.0000	0.1308
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.1957	1.1957	1.7000e-004	3.0000e-005	1.2100
Total	1.6200e-003	2.2900e-003	4.0900e-003	2.0000e-005	1.2700e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0528	2.6829	2.7357	3.3500e-003	3.0000e-005	2.8295

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.8000e-004	2.2900e-003	4.0600e-003	2.0000e-005	1.2700e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.4872	1.4872	6.0000e-005	0.0000	1.4887
Waste						0.0000	0.0000		0.0000	0.0000	0.0528	0.0000	0.0528	3.1200e-003	0.0000	0.1308
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.1957	1.1957	1.7000e-004	3.0000e-005	1.2100
Total	1.6200e-003	2.2900e-003	4.0900e-003	2.0000e-005	1.2700e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0528	2.6829	2.7357	3.3500e-003	3.0000e-005	2.8295

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	5/1/2021	7/23/2021	5	60	
2	Site Preparation	Site Preparation	5/29/2021	5/28/2021	5	0	
3	Building Construction	Building Construction	6/17/2021	6/16/2021	5	0	
4	Demolition	Demolition	7/24/2021	8/6/2021	5	10	
5	Grading2	Grading	8/7/2021	10/29/2021	5	60	
6	Paving	Paving	5/5/2022	5/4/2022	5	0	
7	Architectural Coating	Architectural Coating	5/31/2022	5/30/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading2	Excavators	2	8.00	158	0.38
Grading2	Graders	0	8.00	187	0.41
Grading2	Rubber Tired Dozers	0	8.00	247	0.40
Grading2	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	6.00	132	0.36
Paving	Rollers	0	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	5	24.00	3.00	1,066.00	10.80	7.30	45.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	10.80	7.30	0.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	0.00	0.00	0.00	10.80	7.30	0.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	24.00	2.00	178.00	10.80	7.30	45.00	LD_Mix	HDT_Mix	HHDT
Grading2	5	24.00	3.00	1,066.00	10.80	7.30	45.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	10.80	7.30	0.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	0.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.4000e-004	0.0000	7.4000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.2998	0.3997	5.9000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	51.7935	51.7935	0.0168	0.0000	52.2122
Total	0.0306	0.2998	0.3997	5.9000e-004	7.4000e-004	0.0163	0.0171	1.1000e-004	0.0150	0.0151	0.0000	51.7935	51.7935	0.0168	0.0000	52.2122

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3.2 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.4600e-003	0.2608	0.0528	8.7000e-004	0.0203	9.6000e-004	0.0213	5.5800e-003	9.2000e-004	6.5000e-003	0.0000	83.7516	83.7516	3.1600e-003	0.0000	83.8305
Vendor	2.8000e-004	9.6300e-003	2.0400e-003	2.0000e-005	5.9000e-004	2.0000e-005	6.1000e-004	1.7000e-004	2.0000e-005	1.9000e-004	0.0000	2.3577	2.3577	1.3000e-004	0.0000	2.3610
Worker	2.3000e-003	1.6400e-003	0.0172	5.0000e-005	5.6900e-003	4.0000e-005	5.7300e-003	1.5100e-003	4.0000e-005	1.5500e-003	0.0000	4.8850	4.8850	1.2000e-004	0.0000	4.8879
Total	0.0110	0.2720	0.0720	9.4000e-004	0.0266	1.0200e-003	0.0276	7.2600e-003	9.8000e-004	8.2400e-003	0.0000	90.9943	90.9943	3.4100e-003	0.0000	91.0794

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.3000e-004	0.0000	3.3000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.2998	0.3997	5.9000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	51.7934	51.7934	0.0168	0.0000	52.2122
Total	0.0306	0.2998	0.3997	5.9000e-004	3.3000e-004	0.0163	0.0167	5.0000e-005	0.0150	0.0151	0.0000	51.7934	51.7934	0.0168	0.0000	52.2122

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3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.5 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4200e-003	0.0000	2.4200e-003	3.7000e-004	0.0000	3.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-003	0.0500	0.0666	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.6322	8.6322	2.7900e-003	0.0000	8.7020
Total	5.1000e-003	0.0500	0.0666	1.0000e-004	2.4200e-003	2.7200e-003	5.1400e-003	3.7000e-004	2.5000e-003	2.8700e-003	0.0000	8.6322	8.6322	2.7900e-003	0.0000	8.7020

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3.5 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4100e-003	0.0435	8.8100e-003	1.4000e-004	3.3900e-003	1.6000e-004	3.5500e-003	9.3000e-004	1.5000e-004	1.0900e-003	0.0000	13.9848	13.9848	5.3000e-004	0.0000	13.9980
Vendor	3.0000e-005	1.0700e-003	2.3000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2620	0.2620	1.0000e-005	0.0000	0.2623
Worker	3.8000e-004	2.7000e-004	2.8600e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8142	0.8142	2.0000e-005	0.0000	0.8147
Total	1.8200e-003	0.0449	0.0119	1.5000e-004	4.4100e-003	1.7000e-004	4.5800e-003	1.2000e-003	1.6000e-004	1.3700e-003	0.0000	15.0609	15.0609	5.6000e-004	0.0000	15.0749

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0900e-003	0.0000	1.0900e-003	1.6000e-004	0.0000	1.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-003	0.0500	0.0666	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.6322	8.6322	2.7900e-003	0.0000	8.7020
Total	5.1000e-003	0.0500	0.0666	1.0000e-004	1.0900e-003	2.7200e-003	3.8100e-003	1.6000e-004	2.5000e-003	2.6600e-003	0.0000	8.6322	8.6322	2.7900e-003	0.0000	8.7020

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3.5 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4100e-003	0.0435	8.8100e-003	1.4000e-004	3.3900e-003	1.6000e-004	3.5500e-003	9.3000e-004	1.5000e-004	1.0900e-003	0.0000	13.9848	13.9848	5.3000e-004	0.0000	13.9980
Vendor	3.0000e-005	1.0700e-003	2.3000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2620	0.2620	1.0000e-005	0.0000	0.2623
Worker	3.8000e-004	2.7000e-004	2.8600e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8142	0.8142	2.0000e-005	0.0000	0.8147
Total	1.8200e-003	0.0449	0.0119	1.5000e-004	4.4100e-003	1.7000e-004	4.5800e-003	1.2000e-003	1.6000e-004	1.3700e-003	0.0000	15.0609	15.0609	5.6000e-004	0.0000	15.0749

3.6 Grading2 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.4000e-004	0.0000	7.4000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.2998	0.3997	5.9000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	51.7935	51.7935	0.0168	0.0000	52.2122
Total	0.0306	0.2998	0.3997	5.9000e-004	7.4000e-004	0.0163	0.0171	1.1000e-004	0.0150	0.0151	0.0000	51.7935	51.7935	0.0168	0.0000	52.2122

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3.6 Grading2 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.4600e-003	0.2608	0.0528	8.7000e-004	0.0203	9.6000e-004	0.0213	5.5800e-003	9.2000e-004	6.5000e-003	0.0000	83.7516	83.7516	3.1600e-003	0.0000	83.8305
Vendor	2.8000e-004	9.6300e-003	2.0400e-003	2.0000e-005	5.9000e-004	2.0000e-005	6.1000e-004	1.7000e-004	2.0000e-005	1.9000e-004	0.0000	2.3577	2.3577	1.3000e-004	0.0000	2.3610
Worker	2.3000e-003	1.6400e-003	0.0172	5.0000e-005	5.6900e-003	4.0000e-005	5.7300e-003	1.5100e-003	4.0000e-005	1.5500e-003	0.0000	4.8850	4.8850	1.2000e-004	0.0000	4.8879
Total	0.0110	0.2720	0.0720	9.4000e-004	0.0266	1.0200e-003	0.0276	7.2600e-003	9.8000e-004	8.2400e-003	0.0000	90.9943	90.9943	3.4100e-003	0.0000	91.0794

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.3000e-004	0.0000	3.3000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.2998	0.3997	5.9000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	51.7934	51.7934	0.0168	0.0000	52.2122
Total	0.0306	0.2998	0.3997	5.9000e-004	3.3000e-004	0.0163	0.0167	5.0000e-005	0.0150	0.0151	0.0000	51.7934	51.7934	0.0168	0.0000	52.2122

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3.8 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.8000e-004	2.2900e-003	4.0600e-003	2.0000e-005	1.2700e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.4872	1.4872	6.0000e-005	0.0000	1.4887
Unmitigated	3.8000e-004	2.2900e-003	4.0600e-003	2.0000e-005	1.2700e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.4872	1.4872	6.0000e-005	0.0000	1.4887

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.60	1.60	1.60	3,406	3,406
Total	1.60	1.60	1.60	3,406	3,406

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.561348	0.038614	0.190285	0.107199	0.015389	0.005180	0.024554	0.046236	0.002209	0.002456	0.005491	0.000334	0.000704

5.0 Energy Detail

Historical Energy Use: N

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5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	tons/yr										MT/yr						
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005
Unmitigated	1.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005
Total	1.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005
Total	1.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	6.0000e-005

7.0 Water Detail

Stanley Reach Repairs_Import Haul - Alameda County, Annual

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.1957	1.7000e-004	3.0000e-005	1.2100
Unmitigated	1.1957	1.7000e-004	3.0000e-005	1.2100

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 3.58636	1.1957	1.7000e-004	3.0000e-005	1.2100
Total		1.1957	1.7000e-004	3.0000e-005	1.2100

Stanley Reach Repairs_Import Haul - Alameda County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 3.58636	1.1957	1.7000e-004	3.0000e-005	1.2100
Total		1.1957	1.7000e-004	3.0000e-005	1.2100

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0528	3.1200e-003	0.0000	0.1308
Unmitigated	0.0528	3.1200e-003	0.0000	0.1308

Stanley Reach Repairs_Import Haul - Alameda County, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.26	0.0528	3.1200e-003	0.0000	0.1308
Total		0.0528	3.1200e-003	0.0000	0.1308

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.26	0.0528	3.1200e-003	0.0000	0.1308
Total		0.0528	3.1200e-003	0.0000	0.1308

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Stanley Reach Repairs_Import Haul - Alameda County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

CalEEMod Outputs Emissions Calculations

BAAQMD Thresholds of Significance

CRITERIA POLLUTANTS	ppd					
	ROG	NOx	PM10 (exhaust)	PM10 (dust)	PM2.5 (exhaust)	PM2.5 (dust)
Construction	54	54	82	BMPs	54	BMPs
Operation	54	54	82 (total)		54 (total)	
CRITERIA POLLUTANTS	tpy					
	ROG	NOx	PM10 (exhaust)	PM10 (dust)	PM2.5 (exhaust)	PM2.5 (dust)
Construction	N/A	N/A	N/A	N/A	N/A	N/A
Operation	10	10	15 (total)		10 (total)	
GREENHOUSE GASES	MT					
	CO2e					
Construction	N/A					
Operation	1,100					

Construction Work Days	130
------------------------	-----

Days per Year	365
---------------	-----

Pounds to	Tons
2000	1

Construction Emissions (CalEEMod Output)

Criteria Pollutant Construction Emissions

Criteria Pollutant Emissions - EXPORT Haul Trip Model (tpy)					
Construction Phase	Emission Source	ROG	NOx	PM10 exhaust	PM2.5 exhaust
Grading 1	On-Site	0.03	0.30	0.02	0.02
	Off-Site	0.01	0.15	0.00	0.00
Demolition	On-Site	0.01	0.05	0.00	0.00
	Off-Site	0.00	0.02	0.00	0.00
Grading 2	On-Site	0.03	0.30	0.02	0.02
	Off-Site	0.01	0.15	0.00	0.00

Criteria Pollutant Emissions - IMPORT Haul Trip Model (tpy)					
Construction Phase	Emission Source	ROG	NOx	PM10 exhaust	PM2.5 exhaust
Grading 1	Hauling	0.01	0.26	0.00	0.00
Demolition	Hauling	0.00	0.04	0.00	0.00
Grading 2	Hauling	0.01	0.26	0.00	0.00

TOTAL Criteria Pollutant Emissions - EXPORT & IMPORT (tpy)					
		ROG	NOx	PM10 exhaust	PM2.5 exhaust
<i>Total Emissions</i>		0.10	1.53	0.04	0.04

TOTAL Criteria Pollutant Emissions - EXPORT & IMPORT (ppd)				
	ROG	NOx	PM10 exhaust	PM2.5 exhaust
<i>Total Emissions</i>	1.50	23.60	0.59	0.54

GHG Construction Emissions

GHG Emissions - EXPORT Haul Trip Model (MT/yr)		
Construction Phase	Emission Source	CO2e
Grading 1	On-site	52.21
	Off-site	36.43
Demolition	On-Site	8.70
	Off-Site	5.94
Grading 2	On-site	52.21
	Off-Site	36.43

GHG Emissions - Import Haul Trip Model (MT/yr)		
Construction Phase	Emission Source	CO2e
Grading 1	Hauling	83.83
Demolition	Hauling	14.00
Grading 2	Hauling	83.83

TOTAL GHG Emissions (MT/yr)	
	CO2e
<i>Total Emissions</i>	373.58

Operational Emissions (CalEEMod Output)

Criteria Pollutant Operational Emissions

Operational Emissions (tpy)				
	ROG	NOx	PM10	PM2.5
Mobile Source	0.00	0.00	0.00	0.00

Operational Emissions (ppd)				
	ROG	NOx	PM10	PM2.5
Mobile Source	0.00	0.01	0.01	0.00

GHG Construction Emissions

TOTAL GHG Emissions (MT/yr)	
	CO2e

Total Emissions | 2.83

A-2 Health Risk Assessment

All Receptors - Unmitigated Construction Cancer Risk

Haul Truck Trip Lengths

	Import	Export	Vendor	
Trip Length	90	14	14.6	miles
	144841	22531	23496	meters

Trip to North Reach, modeled distance

N_IN1	1876.60	meters
N_IN2	1583.00	meters
N_OUT1	1720.60	meters
N_OUT2	2237.60	meters

Trip to South Reach, modeled distance

S_IN1	3902.60	meters
S_OUT1	2010.00	meters

Haul Truck Adjustment Factor to Model

Source	Source Description	Import/Export	Import	Export	Vendor
N_IN1	Isabel Ave to E Jack London Blvd	Import	0.01	0.08	0.08
N_IN2	W Jack London Blvd to Project site	Import	0.01	0.07	0.07
N_OUT1	Project site to Murrieta Blvd	Export	0.01	0.08	0.07
N_OUT2	N Murreta Blvd to E Stanley	Export	0.02	0.10	0.10
S_IN1	Isabel Ave to E Jack London Blvd	Import	0.03	0.17	0.17
S_OUT1	N Murreta Blvd to E Stanley	Export	0.01	0.09	0.09

Estimated Trip Breakdown

Site No.	Percentage
1a	30%
1b	27%
2	21%
3	21%

Phase Name	Start Date	End Date	Days			Total Unmitigated DPM (tons)					
			3rd Trimester	Age 0<2	Calendar Days	Onsite Offroad	North Staging Area	South Staging Area	Haul Truck Import	Haul Truck Export	Vendor Trips
Reach Repair	5/1/2021	10/29/2021	91	90.00	181	3.53E-02	1.61E-05	1.18E-05	2.08E-03	1.06E-03	4.00E-05

Phase Name	Start Date	End Date	Total Unmitigated DPM (g/s)								
			CONST	N_SA	S_SA	N_IN1	N_IN2	N_OUT1	N_OUT2	S_IN1	S_OUT1
Reach Repair	5/1/2021	10/29/2021	2.05E-03	9.34E-07	6.82E-07	3.97E-06	3.35E-06	3.64E-06	4.73E-06	6.03E-06	3.11E-06

Risk Factors

Abbreviation	UOM	3rd Trimester	0<2
Daily Breathing Rate (95th %ile)	DBR L/kg-day	361	1090
Fraction Of Time At Home	FAH unitless	1	1
Exposure Frequency	EF days/year	0.96	0.96
Age Sensitivity Factor	ASF unitless	10	10
Inhalation Absorption Factor	A unitless	1	1
Conversion Factor	CF ₁ m ³ /L	0.001	0.001
Conversion Factor	CF ₂ µg/m ³	0.001	0.001
Cancer Potency Factor (diesel exhau	CPF mg/kg-day ⁻¹	1.1	1.1
Averaging Time (for residential expc	AT years	70.00	70.00

Intake Factor for Inhalation, IF (m³/kg-day)

Year	Equation	3rd Trimester	0<2
Reach Repair	DBR*FAH*EF*ED*ASF*A*CF/AT	0.012	0.037

Risk Calculation Part 1, R1

	3rd Trimester	0<2
IF*CPF*CF	1.36E-05	4.05E-05

MAX

Cancer Risk	UTM X	UTM Y
1.31	606530	4170870

Diesel Particulate Matter concentration, C_{DPM} (ug/m³)

X (UTM)	Y (UTM)	Reach Repair										Total
		CONST	N_SA	S_SA	N_IN1	N_IN2	N_OUT1	N_OUT2	S_IN1	S_OUT1	Total	
606730	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606750	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606770	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606790	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606810	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606830	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606850	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606870	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606890	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606910	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606930	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606950	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606970	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606990	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607010	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607030	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607050	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607070	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607090	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607110	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607130	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607150	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607170	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606730	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606750	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606770	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606790	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606810	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606830	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606850	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606870	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606890	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606910	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606930	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606950	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606970	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606990	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607010	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607030	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607050	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607070	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607090	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607110	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607130	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607150	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607170	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606730	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606750	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001

Risk Calculation Part 2

3rd Trimester	0<2	Total
1.02E-08	3.03E-08	0.04
1.01E-08	3.01E-08	0.04
1.00E-08	2.99E-08	0.04
9.95E-09	2.97E-08	0.04
9.89E-09	2.95E-08	0.04
9.83E-09	2.94E-08	0.04
9.77E-09	2.92E-08	0.04
9.70E-09	2.90E-08	0.04
9.64E-09	2.88E-08	0.04
9.52E-09	2.84E-08	0.04
9.47E-09	2.83E-08	0.04
9.42E-09	2.81E-08	0.04
9.37E-09	2.80E-08	0.04
9.31E-09	2.78E-08	0.04
9.27E-09	2.77E-08	0.04
9.22E-09	2.75E-08	0.04
9.18E-09	2.74E-08	0.04
9.15E-09	2.73E-08	0.04
9.12E-09	2.72E-08	0.04
9.07E-09	2.71E-08	0.04
9.02E-09	2.69E-08	0.04
8.97E-09	2.68E-08	0.04
8.92E-09	2.66E-08	0.04
1.08E-08	3.22E-08	0.04
1.07E-08	3.20E-08	0.04
1.06E-08	3.18E-08	0.04
1.06E-08	3.15E-08	0.04
1.05E-08	3.13E-08	0.04
1.04E-08	3.11E-08	0.04
1.03E-08	3.09E-08	0.04
1.03E-08	3.07E-08	0.04
1.02E-08	3.05E-08	0.04
1.01E-08	3.01E-08	0.04
1.00E-08	2.99E-08	0.04
9.95E-09	2.97E-08	0.04
9.89E-09	2.95E-08	0.04
9.82E-09	2.93E-08	0.04
9.78E-09	2.92E-08	0.04
9.73E-09	2.90E-08	0.04
9.68E-09	2.89E-08	0.04
9.63E-09	2.87E-08	0.04
9.57E-09	2.86E-08	0.04
9.51E-09	2.84E-08	0.04
9.46E-09	2.83E-08	0.04
9.41E-09	2.81E-08	0.04
9.35E-09	2.79E-08	0.04
1.15E-08	3.43E-08	0.05
1.14E-08	3.40E-08	0.05

Diesel Particulate Matter concentration, C_{DPM} ($\mu\text{g}/\text{m}^3$)

X (UTM)	Y (UTM)	Reach Repair										
		CONST	N_SA	S_SA	N_IN1	N_IN2	N_OUT1	N_OUT2	S_IN1	S_OUT1	Total	
606630	4172210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
606650	4172210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
606670	4172210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
606690	4172210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
606710	4172210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
606730	4172210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
606750	4172210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
606770	4172210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
606790	4172210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
606810	4172210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
606830	4172210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
606850	4172210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Risk Calculation Part 2

$\sum R1 * C_{DPM}$		
3rd Trimester	Q-2	Total
2.28E-09	6.80E-09	0.01
2.30E-09	6.85E-09	0.01
2.31E-09	6.91E-09	0.01
2.33E-09	6.96E-09	0.01
2.35E-09	7.01E-09	0.01
2.36E-09	7.05E-09	0.01
2.38E-09	7.10E-09	0.01
2.39E-09	7.14E-09	0.01
2.40E-09	7.18E-09	0.01
2.41E-09	7.21E-09	0.01
2.43E-09	7.24E-09	0.01
2.44E-09	7.27E-09	0.01

All Receptors - Unmitigated Construction Annual Average PM2.5 Concentration

Haul Truck Trip Lengths

	Import	Export	Vendor	
Trip Length	14	90	14.6	miles
	22531	144841	23496	meters

Trip to North Reach, modeled distance

N_IN1	1876.60	meters
N_IN2	1583.00	meters
N_OUT1	1720.60	meters
N_OUT2	2237.60	meters

Trip to South Reach, modeled distance

S_IN1	3902.60	meters
S_OUT1	2010.00	meters

Haul Truck Adjustment Factor to Model

Source	Source Description	Import/Export	Import	Export	Vendor
N_IN1	Isabel Ave to E Jack London Blvd	Import	0.08	0.01	0.08
N_IN2	W Jack London Blvd to Project site	Import	0.07	0.01	0.07
N_OUT1	Project site to Murrieta Blvd	Export	0.08	0.01	0.07
N_OUT2	N Murreta Blvd to E Stanley	Export	0.10	0.02	0.10
S_IN1	Isabel Ave to E Jack London Blvd	Import	0.17	0.03	0.17
S_OUT1	N Murreta Blvd to E Stanley	Export	0.09	0.01	0.09

Estimated Trip Breakdown

Site No.	Percentage
1a	30%
1b	27%
2	21%
3	21%

Phase Name	Start Date	End Date	Days			Total Unmitigated PM _{2.5} (tons)*					
			3rd Trimester	Age 0<2	Calendar Days	Onsite	Offroad	North Staging Area	South Staging Area	Haul Truck Import	Haul Truck Export
Reach Repair	5/1/2021	10/29/2021	91	90.00	181	3.25E-02	1.54E-05	1.12E-05	1.41E-02	3.68E-03	4.00E-04

*Haul Truck and Vendor Trips include fugitive onroad emissions

Phase Name	Start Date	End Date	Total Unmitigated PM _{2.5} (g/s)								
			CONST	N_SA	S_SA	N_IN1	N_IN2	N_OUT1	N_OUT2	S_IN1	S_OUT1
Reach Repair	5/1/2021	10/29/2021	1.89E-03	8.93E-07	6.52E-07	4.20E-05	3.54E-05	3.85E-05	5.01E-05	6.38E-05	3.29E-05

MAX

PM2.5	UTM X	UTM Y
0.02	606530	4170870

Annual Average PM2.5 Concentration (ug/m³)

X (UTM)	Y (UTM)	Reach Repair										Total
		CONST	N_SA	S_SA	N_IN1	N_IN2	N_OUT1	N_OUT2	S_IN1	S_OUT1		
606730	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606750	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606770	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606790	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606810	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606830	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606850	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606870	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606890	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606910	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606930	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606950	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606970	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606990	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607010	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607030	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607050	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607070	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607090	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607110	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607130	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607150	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607170	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606730	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606750	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606770	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606790	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606810	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606830	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606850	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606870	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606890	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606910	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606930	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606950	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606970	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606990	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607010	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607030	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607050	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607070	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607090	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607110	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607130	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607150	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
607170	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606730	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
606750	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001

All Receptors - Unmitigated Construction Non-Cancer Chronic Risk

Haul Truck Trip Lengths

	Import	Export	Vendor	
Trip Length	14	90	14.6	miles
	22531	144841	23496	meters

Trip to North Reach, modeled distance		
N_IN1	1876.60	meters
N_IN2	1583.00	meters
N_OUT1	1720.60	meters
N_OUT2	2237.60	meters
Trip to South Reach, modeled distance		
S_IN1	3902.60	meters
S_OUT1	2010.00	meters

Haul Truck Adjustment Factor to Model

Source	Source Description	Import/Export	Import	Export	Vendor
N_IN1	Isabel Ave to E Jack London Blvd	Import	0.08	0.01	0.08
N_IN2	W Jack London Blvd to Project site	Import	0.07	0.01	0.07
N_OUT1	Project site to Murrieta Blvd	Export	0.08	0.01	0.07
N_OUT2	N Murreta Blvd to E Stanley	Export	0.10	0.02	0.10
S_IN1	Isabel Ave to E Jack London Blvd	Import	0.17	0.03	0.17
S_OUT1	N Murreta Blvd to E Stanley	Export	0.09	0.01	0.09

Estimated Trip Breakdown

Site No.	Percentage
1a	30%
1b	27%
2	21%
3	21%

Phase Name	Start Date	End Date	Days			Total Umitigated DPM (tons)					
			3rd Trimester	Age 0-2	Calendar Days	Onsite Offroad	North Staging Area	South Staging Area	Haul Truck Import	Haul Truck Export	Vendor Trips
Reach Repair	5/1/2021	10/29/2021	91	90.00	181	3.53E-02	1.61E-05	1.18E-05	2.08E-03	1.06E-03	4.00E-05

Phase Name	Start Date	End Date	Total Umitigated DPM (g/s)								
			CONST	N_SA	S_SA	N_IN1	N_IN2	N_OUT1	N_OUT2	S_IN1	S_OUT1
Reach Repair	5/1/2021	10/29/2021	2.05E-03	9.34E-07	6.82E-07	6.38E-06	5.38E-06	5.85E-06	7.60E-06	9.68E-06	4.99E-06

Risk Factors

	Abbreviation	UOM	
Chronic Inhalation	REL	ug/m ³	5

MAX

HI Risk	UTM X	UTM Y
0.00	606530	4170870

Diesel Particulate Matter concentration, C_{DPM} (ug/m³)

X (UTM)	Y (UTM)	Reach Repair										Total	C _{DPM} /REL unitless
		CONST	N_SA	S_SA	N_IN1	N_IN2	N_OUT1	N_OUT2	S_IN1	S_OUT1	Total		
606730	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.50E-04
606750	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.49E-04
606770	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.48E-04
606790	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.47E-04
606810	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.46E-04
606830	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.46E-04
606850	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.45E-04
606870	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.44E-04
606890	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.43E-04
606910	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.41E-04
606930	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.40E-04
606950	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.39E-04
606970	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.39E-04
606990	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.38E-04
607010	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.37E-04
607030	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.37E-04
607050	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.36E-04
607070	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.35E-04
607090	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.35E-04
607110	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.34E-04
607130	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.34E-04
607150	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.33E-04
607170	4170230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.32E-04
606730	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.60E-04
606750	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.59E-04
606770	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.58E-04
606790	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.56E-04
606810	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.55E-04
606830	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.54E-04
606850	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.53E-04
606870	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.52E-04
606890	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.51E-04
606910	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.49E-04
606930	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.48E-04
606950	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.47E-04
606970	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.46E-04
606990	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.45E-04
607010	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.45E-04
607030	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.44E-04
607050	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.43E-04
607070	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.43E-04
607090	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.42E-04
607110	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.41E-04
607130	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.40E-04
607150	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.39E-04
607170	4170250	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.38E-04
606730	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.70E-04
606750	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.69E-04
606770	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.67E-04
606790	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.66E-04
606810	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.65E-04
606830	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.63E-04
606850	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.62E-04
606870	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.61E-04
606890	4170270	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	1.60E-04

HI Risk

Calculation

C _{DPM} /REL unitless

Appendix B

Special Status Species List





Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad> IS (Livermore (3712167)> OR Dublin (3712168)> OR Altamont (3712166)> OR La Costa Valley (3712157)> OR Niles (3712158)> OR Mendenhall Springs (3712156)> OR Byron Hot Springs (3712176)> OR Tassajara (3712177)> OR Diablo (3712178))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Accipiter cooperii</i> Cooper's hawk	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	505 1,200	118 S:5	1	2	0	0	0	2	1	4	5	0	0
<i>Accipiter striatus</i> sharp-shinned hawk	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	1,000 1,000	22 S:1	0	1	0	0	0	0	1	0	1	0	0
<i>Agelaius tricolor</i> tricolored blackbird	G2G3 S1S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	52 920	955 S:24	2	5	4	0	2	11	15	9	22	2	0
<i>Alkali Meadow</i> Alkali Meadow	G3 S2.1	None None		140 200	8 S:5	0	0	0	0	0	5	5	0	5	0	0
<i>Alkali Seep</i> Alkali Seep	G3 S2.1	None None		180 180	10 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Ambystoma californiense</i> California tiger salamander	G2G3 S2S3	Threatened Threatened	CDFW_WL-Watch List IUCN_VU-Vulnerable	15 3,660	1262 S:270	29	115	29	7	20	70	106	164	250	13	7
<i>Ammodramus savannarum</i> grasshopper sparrow	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	668 668	27 S:1	0	1	0	0	0	0	0	1	1	0	0
<i>Amsinckia grandiflora</i> large-flowered fiddleneck	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_UCBBG-UC Berkeley Botanical Garden	1,800 1,800	9 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Anomobryum julaceum</i> slender silver moss	G5? S2	None None	Rare Plant Rank - 4.2		13 S:1	0	0	0	0	0	1	0	1	1	0	0



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Antrozous pallidus</i> pallid bat	G5 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	144 800	420 S:6	2	0	0	0	0	4	3	3	6	0	0
<i>Aquila chrysaetos</i> golden eagle	G5 S3	None None	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	250 2,200	321 S:19	14	4	0	0	0	1	10	9	19	0	0
<i>Arctostaphylos auriculata</i> Mt. Diablo manzanita	G2 S2	None None	Rare Plant Rank - 1B.3	1,200 1,850	17 S:8	2	2	0	0	0	4	5	3	8	0	0
<i>Arctostaphylos manzanita ssp. laevigata</i> Contra Costa manzanita	G5T2 S2	None None	Rare Plant Rank - 1B.2	1,200 2,000	10 S:7	0	1	0	0	0	6	5	2	7	0	0
<i>Ardea herodias</i> great blue heron	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	40 215	156 S:2	1	1	0	0	0	0	1	1	2	0	0
<i>Astragalus tener var. tener</i> alkali milk-vetch	G2T1 S1	None None	Rare Plant Rank - 1B.2	60 550	65 S:2	0	0	0	0	2	0	2	0	0	2	0
<i>Athene cucularia</i> burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	15 2,080	1989 S:71	12	27	9	5	1	17	14	57	70	1	0
<i>Atriplex cordulata var. cordulata</i> heartscale	G3T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	30 680	66 S:4	0	1	2	0	0	1	3	1	4	0	0
<i>Atriplex depressa</i> brittlescale	G2 S2	None None	Rare Plant Rank - 1B.2	80 800	60 S:15	4	7	1	0	0	3	5	10	15	0	0
<i>Atriplex minuscula</i> lesser saltscale	G2 S2	None None	Rare Plant Rank - 1B.1	507 740	52 S:8	2	4	1	0	0	1	2	6	8	0	0



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<i>Balsamorhiza macrolepis</i> big-scale balsamroot	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive USFS_S-Sensitive	900 900	51 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Blepharizonia plumosa</i> big tarplant	G1G2 S1S2	None None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden		53 S:4	0	0	0	0	0	4	3	1	4	0	0
<i>Bombus caliginosus</i> obscure bumble bee	G4? S1S2	None None	IUCN_VU-Vulnerable	3,150 3,150	181 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Bombus crotchii</i> Crotch bumble bee	G3G4 S1S2	None Candidate Endangered		350 2,000	276 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Bombus occidentalis</i> western bumble bee	G2G3 S1	None Candidate Endangered	USFS_S-Sensitive XERCES_IM-Imperiled	100 2,000	279 S:6	0	0	0	0	0	6	6	0	6	0	0
<i>Branchinecta longiantenna</i> longhorn fairy shrimp	G1 S1S2	Endangered None	IUCN_EN-Endangered	604 1,065	23 S:6	0	0	0	0	0	6	0	6	6	0	0
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	G3 S3	Threatened None	IUCN_VU-Vulnerable	75 900	790 S:9	1	3	1	0	0	4	2	7	9	0	0
<i>Branchinecta mesovallensis</i> midvalley fairy shrimp	G2 S2S3	None None		60 60	144 S:1	0	1	0	0	0	0	0	1	1	0	0
<i>Buteo regalis</i> ferruginous hawk	G4 S3S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	540 640	107 S:4	0	1	1	0	0	2	3	1	4	0	0
<i>Buteo swainsoni</i> Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	100 2,000	2518 S:5	0	2	1	0	0	2	1	4	5	0	0
<i>Calochortus pulchellus</i> Mt. Diablo fairy-lantern	G2 S2	None None	Rare Plant Rank - 1B.2	550 2,197	52 S:19	1	6	1	1	0	10	1	18	19	0	0
<i>Campanula exigua</i> chaparral harebell	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	300 3,200	50 S:3	0	0	0	0	0	3	3	0	3	0	0



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<i>Centromadia parryi ssp. congdonii</i> Congdon's tarplant	G3T1T2 S1S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	20 800	98 S:28	5	9	6	1	4	3	11	17	24	3	1
<i>Chloropyron molle ssp. hispidum</i> hispid salty bird's-beak	G2T1 S1	None None	Rare Plant Rank - 1B.1	510 510	35 S:1	0	1	0	0	0	0	0	1	1	0	0
<i>Chloropyron palmatum</i> palmate-bracted bird's-beak	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	510 510	25 S:1	0	1	0	0	0	0	0	1	1	0	0
<i>Circus hudsonius</i> northern harrier	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	900 900	53 S:1	1	0	0	0	0	0	1	0	1	0	0
<i>Cismontane Alkali Marsh</i> Cismontane Alkali Marsh	G1 S1.1	None None		180 180	4 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Clarkia concinna ssp. automixa</i> Santa Clara red ribbons	G5?T3 S3	None None	Rare Plant Rank - 4.3	300 300	20 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	G3G4 S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	310 3,790	635 S:6	0	1	1	0	1	3	4	2	5	1	0
<i>Deinandra bacigalupii</i> Livermore tarplant	G1 S1	None Endangered	Rare Plant Rank - 1B.1	520 650	4 S:4	0	2	0	1	0	1	0	4	4	0	0
<i>Delphinium californicum ssp. interius</i> Hospital Canyon larkspur	G3T3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	832 3,300	28 S:9	3	3	1	0	0	2	2	7	9	0	0
<i>Delphinium recurvatum</i> recurved larkspur	G2? S2?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden	50 50	120 S:1	0	0	0	0	0	1	1	0	1	0	0



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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Dipodomys heermanni berkeleyensis</i> Berkeley kangaroo rat	G3G4T1 S1	None None		2,400 3,200	8 S:2	0	1	0	0	0	1	2	0	2	0	0
<i>Efferia antiochi</i> Antioch efferian robberfly	G1G2 S1S2	None None		350 350	4 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Elanus leucurus</i> white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	408 615	180 S:4	1	1	1	0	0	1	3	1	4	0	0
<i>Emys marmorata</i> western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	84 3,500	1385 S:56	5	19	4	3	0	25	16	40	56	0	0
<i>Eremophila alpestris actia</i> California horned lark	G5T4Q S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	600 680	94 S:2	0	2	0	0	0	0	2	0	2	0	0
<i>Eriogonum truncatum</i> Mt. Diablo buckwheat	G1 S1	None None	Rare Plant Rank - 1B.1 SB_UCBBG-UC Berkeley Botanical Garden		7 S:2	0	0	0	0	0	2	1	1	2	0	0
<i>Eryngium jepsonii</i> Jepson's coyote-thistle	G2 S2	None None	Rare Plant Rank - 1B.2	775 775	19 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Eschscholzia rhombipetala</i> diamond-petaled California poppy	G1 S1	None None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden SB_UCBBG-UC Berkeley Botanical Garden	100 100	12 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Extriplex joaquinana</i> San Joaquin spearscale	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	25 800	127 S:45	4	11	8	5	6	11	17	28	39	1	5
<i>Falco mexicanus</i> prairie falcon	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	703 2,240	460 S:10	10	0	0	0	0	0	0	10	10	0	0



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<i>Falco peregrinus anatum</i> American peregrine falcon	G4T4 S3S4	Delisted Delisted	CDF_S-Sensitive CDFW_FP-Fully Protected USFWS_BCC-Birds of Conservation Concern	1,240 1,974	56 S:4	2	0	0	0	0	2	1	3	4	0	0
<i>Fritillaria agrestis</i> stinkbells	G3 S3	None None	Rare Plant Rank - 4.2	100 800	32 S:7	1	1	5	0	0	0	7	0	7	0	0
<i>Fritillaria liliacea</i> fragrant fritillary	G2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden USFS_S-Sensitive		82 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Haliaeetus leucocephalus</i> bald eagle	G5 S3	Delisted Endangered	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	850 850	327 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Helianthella castanea</i> Diablo helianthella	G2 S2	None None	Rare Plant Rank - 1B.2	740 2,705	107 S:22	2	5	6	0	0	9	6	16	22	0	0
<i>Helminthoglypta nickliniana bridgesi</i> Bridges' coast range shoulderband	G3T1 S1S2	None None	IUCN_DD-Data Deficient	1,950 1,950	6 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Hesperolinon breweri</i> Brewer's western flax	G2 S2	None None	Rare Plant Rank - 1B.2	650 2,190	29 S:11	1	4	1	0	0	5	6	5	11	0	0
<i>Hygrotus curvipes</i> curved-foot hygrotus diving beetle	G1 S1	None None		30 1,100	21 S:16	0	0	0	0	0	16	16	0	16	0	0
<i>Lanius ludovicianus</i> loggerhead shrike	G4 S4	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	700 720	110 S:2	0	2	0	0	0	0	0	2	2	0	0
<i>Lasiurus cinereus</i> hoary bat	G5 S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority		238 S:1	0	0	0	0	0	1	1	0	1	0	0



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<i>Laterallus jamaicensis coturniculus</i> California black rail	G3G4T1 S1	None Threatened	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	51 51	303 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Legenere limosa</i> legenere	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_UCBBG-UC Berkeley Botanical Garden	3,300 3,300	83 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	G4 S3S4	Endangered None	IUCN_EN-Endangered	10 10	324 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Linderiella occidentalis</i> California linderiella	G2G3 S2S3	None None	IUCN_NT-Near Threatened	530 920	496 S:8	0	7	0	0	0	1	1	7	8	0	0
<i>Malacothamnus hallii</i> Hall's bush-mallow	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	1,500 1,500	36 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Masticophis flagellum ruddocki</i> San Joaquin coachwhip	G5T2T3 S2?	None None	CDFW_SSC-Species of Special Concern	400 750	96 S:2	0	0	0	1	0	1	2	0	2	0	0
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	G4T2 S2	Threatened Threatened		195 2,391	167 S:51	15	12	2	0	2	20	19	32	49	2	0
<i>Melospiza melodia pusillula</i> Alameda song sparrow	G5T2? S2S3	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern		38 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Monolopia gracilens</i> woodland woollythreads	G3 S3	None None	Rare Plant Rank - 1B.2	1,700 3,000	68 S:3	0	0	0	0	0	3	1	2	3	0	0
<i>Myotis yumanensis</i> Yuma myotis	G5 S4	None None	BLM_S-Sensitive IUCN_LC-Least Concern WBWG_LM-Low-Medium Priority	380 870	265 S:2	0	1	0	0	0	1	0	2	2	0	0



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<i>Navarretia prostrata</i> prostrate vernal pool navarretia	G2 S2	None None	Rare Plant Rank - 1B.2	340 340	60 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Neotoma fuscipes annectens</i> San Francisco dusky-footed woodrat	G5T2T3 S2S3	None None	CDFW_SSC-Species of Special Concern	225 1,600	42 S:4	1	3	0	0	0	0	0	4	4	0	0
<i>Northern Claypan Vernal Pool</i> Northern Claypan Vernal Pool	G1 S1.1	None None		160 160	21 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Oncorhynchus mykiss irideus pop. 8</i> steelhead - central California coast DPS	G5T2T3Q S2S3	Threatened None	AFS_TH-Threatened	200 200	44 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Phacelia phacelioides</i> Mt. Diablo phacelia	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	2,500 2,500	16 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Phrynosoma blainvillii</i> coast horned lizard	G3G4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	300 2,480	784 S:3	0	1	2	0	0	0	2	1	3	0	0
<i>Plagiobothrys glaber</i> hairless popcornflower	GH SH	None None	Rare Plant Rank - 1A	350 350	9 S:2	0	0	0	0	2	0	1	1	0	2	0
<i>Polemonium carneum</i> Oregon polemonium	G3G4 S2	None None	Rare Plant Rank - 2B.2		16 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Puccinellia simplex</i> California alkali grass	G3 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	80 500	80 S:6	1	0	0	0	1	4	4	2	5	1	0
<i>Rana boylei</i> foothill yellow-legged frog	G3 S3	None Endangered	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive	164 3,790	2468 S:13	1	3	0	0	4	5	6	7	9	3	1
<i>Rana draytonii</i> California red-legged frog	G2G3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	60 3,720	1543 S:276	25	113	54	14	5	65	93	183	271	3	2
<i>Senecio aphanactis</i> chaparral ragwort	G3 S2	None None	Rare Plant Rank - 2B.2 SB_CRES-San Diego Zoo CRES Native Gene Seed Bank SB_RSABG-Rancho Santa Ana Botanic Garden		98 S:1	0	0	0	0	0	1	1	0	1	0	0



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<i>Spea hammondi</i> western spadefoot	G3 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	640 680	1379 S:2	0	0	0	2	0	0	0	2	2	0	0
<i>Spergularia macrotheca var. longistyla</i> long-styled sand-spurrey	G5T2 S2	None None	Rare Plant Rank - 1B.2	500 720	22 S:7	0	0	0	0	1	6	5	2	6	1	0
<i>Streptanthus albidus ssp. peramoenus</i> most beautiful jewelflower	G2T2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden SB_UCBBG-UC Berkeley Botanical Garden USFS_S-Sensitive	400 2,400	103 S:9	2	3	1	0	0	3	3	6	9	0	0
<i>Streptanthus hispidus</i> Mt. Diablo jewelflower	G2 S2	None None	Rare Plant Rank - 1B.3	820 820	8 S:1	0	1	0	0	0	0	1	0	1	0	0
<i>Stuckenia filiformis ssp. alpina</i> slender-leaved pondweed	G5T5 S2S3	None None	Rare Plant Rank - 2B.2	40 600	21 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Suaeda californica</i> California seablite	G1 S1	Endangered None	Rare Plant Rank - 1B.1	10 10	18 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Sycamore Alluvial Woodland</i> Sycamore Alluvial Woodland	G1 S1.1	None None		290 680	17 S:4	0	0	3	1	0	0	4	0	4	0	0
<i>Taxidea taxus</i> American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	120 1,300	592 S:14	2	4	2	0	0	6	11	3	14	0	0
<i>Trifolium hydrophilum</i> saline clover	G2 S2	None None	Rare Plant Rank - 1B.2	350 500	56 S:2	0	0	1	0	1	0	0	2	1	1	0
<i>Triquetrella californica</i> coastal triquetrella	G2 S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	3,849 3,849	13 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Tropidocarpum capparideum</i> caper-fruited tropidocarpum	G1 S1	None None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden USFS_S-Sensitive	25 540	18 S:3	0	0	0	0	2	1	3	0	1	1	1



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Valley Needlegrass Grassland Valley Needlegrass Grassland	G3 S3.1	None None		800 800	45 S:2	0	0	0	0	0	2	2	0	2	0	0
Valley Sink Scrub Valley Sink Scrub	G1 S1.1	None None		20 510	29 S:3	0	0	0	0	0	3	3	0	3	0	0
Viburnum ellipticum oval-leaved viburnum	G4G5 S3?	None None	Rare Plant Rank - 2B.3	1,200 1,500	39 S:4	1	0	0	0	0	3	3	1	4	0	0
Vulpes macrotis mutica San Joaquin kit fox	G4T2 S2	Endangered Threatened		60 990	1018 S:22	3	3	1	0	0	15	21	1	22	0	0

*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

Plant List

62 matches found. [Click on scientific name for details](#)

Search Criteria

Found in Quads 3712178, 3712177, 3712176, 3712168, 3712167, 3712166, 3712158 3712157 and 3712156;

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Display Photos](#)

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Acanthomintha lanceolata	Santa Clara thorn-mint	Lamiaceae	annual herb	Mar-Jun	4.2	S4	G4
Amsinckia grandiflora	large-flowered fiddleneck	Boraginaceae	annual herb	(Mar)Apr-May	1B.1	S1	G1
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	1B.2	S3	G3
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5?T3T4
Anomobryum julaceum	slender silver moss	Bryaceae	moss		4.2	S2	G5?
Arctostaphylos auriculata	Mt. Diablo manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar	1B.3	S2	G2
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar(Apr)	1B.2	S2	G5T2
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S1	G2T1
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	Mar-Oct	4.2	S3	G4T3
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Atriplex minuscula	lesser saltscale	Chenopodiaceae	annual herb	May-Oct	1B.1	S2	G2
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	Jul-Oct	1B.1	S1S2	G1G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	1B.2	S2	G2
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	Mar-May	4.2	S3?	G3?

Campanula exigua	chaparral harebell	Campanulaceae	annual herb	May-Jun	1B.2	S2	G2
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	May-Oct(Nov)	1B.1	S1S2	G3T1T2
Chloropyron molle ssp. hispidum	hispid bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	1B.1	S1	G2T1
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	1B.1	S1	G1
Clarkia concinna ssp. automixa	Santa Clara red ribbons	Onagraceae	annual herb	(Apr)May-Jun(Jul)	4.3	S3	G5?T3
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
Deinandra bacigalupii	Livermore tarplant	Asteraceae	annual herb	Jun-Oct	1B.1	S1	G1
Delphinium californicum ssp. interius	Hospital Canyon larkspur	Ranunculaceae	perennial herb	Apr-Jun	1B.2	S3	G3T3
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	Jan-Mar(Apr)	1B.2	S2	G2
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	Apr-Sep(Nov-Dec)	1B.1	S1	G1
Eriophyllum jepsonii	Jepson's woolly sunflower	Asteraceae	perennial herb	Apr-Jun	4.3	S3	G3
Eryngium jepsonii	Jepson's coyote thistle	Apiaceae	perennial herb	Apr-Aug	1B.2	S2?	G2?
Eschscholzia rhombipetala	diamond-petaled California poppy	Papaveraceae	annual herb	Mar-Apr	1B.1	S1	G1
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	G3
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2	G2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Hesperex caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	4.2	S3	G3
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	May-Jul	1B.2	S2	G2
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	1B.1	S1	G1
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Leptosiphon acicularis	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	4.2	S4?	G4?
Leptosiphon ambiguus	serpentine leptosiphon	Polemoniaceae	annual herb	Mar-Jun	4.2	S4	G4
Leptosyne hamiltonii	Mt. Hamilton coreopsis	Asteraceae	annual herb	Mar-May	1B.2	S2	G2
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	(Apr)May-Sep(Oct)	1B.2	S2	G2
Monardella antonina ssp. antonina	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	Jun-Aug	3	S1S3	G4T1T3Q
Monolopia gracilens	woodland woollythreads	Asteraceae	annual herb	(Feb)Mar-Jul	1B.2	S3	G3
	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q

<u>Myosurus minimus ssp. apus</u>								
<u>Navarretia nigelliformis ssp. nigelliformis</u>	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	4.2	S3	G4T3	
<u>Navarretia nigelliformis ssp. radians</u>	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	1B.2	S2	G4T2	
<u>Navarretia prostrata</u>	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2	
<u>Phacelia phacelioides</u>	Mt. Diablo phacelia	Hydrophyllaceae	annual herb	Apr-May	1B.2	S2	G2	
<u>Plagiobothrys glaber</u>	hairless popcornflower	Boraginaceae	annual herb	Mar-May	1A	SH	GH	
<u>Polemonium carneum</u>	Oregon polemonium	Polemoniaceae	perennial herb	Apr-Sep	2B.2	S2	G3G4	
<u>Puccinellia simplex</u>	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3	
<u>Sanicula saxatilis</u>	rock sanicle	Apiaceae	perennial herb	Apr-May	1B.2	S2	G2	
<u>Senecio aphanactis</u>	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3	
<u>Spergularia macrotheca var. longistyla</u>	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May(Jun)	1B.2	S2	G5T2	
<u>Streptanthus albidus ssp. peramoenus</u>	most beautiful jewelflower	Brassicaceae	annual herb	(Mar)Apr-Sep(Oct)	1B.2	S2	G2T2	
<u>Streptanthus hispidus</u>	Mt. Diablo jewelflower	Brassicaceae	annual herb	Mar-Jun	1B.3	S2	G2	
<u>Stuckenia filiformis ssp. alpina</u>	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	2B.2	S2S3	G5T5	
<u>Trifolium hydrophilum</u>	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2	
<u>Triquetrella californica</u>	coastal triquetrella	Pottiaceae	moss		1B.2	S2	G2	
<u>Tropidocarpum capparideum</u>	caper-fruited tropidocarpum	Brassicaceae	annual herb	Mar-Apr	1B.1	S1	G1	
<u>Viburnum ellipticum</u>	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	2B.3	S3?	G4G5	

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Questions and Comments

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United States Department of the Interior



FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:

January 29, 2019

Consultation Code: 08ESMF00-2019-SLI-0751

Event Code: 08ESMF00-2019-E-02261

Project Name: Stanley Reach Stabilization

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2019-SLI-0751

Event Code: 08ESMF00-2019-E-02261

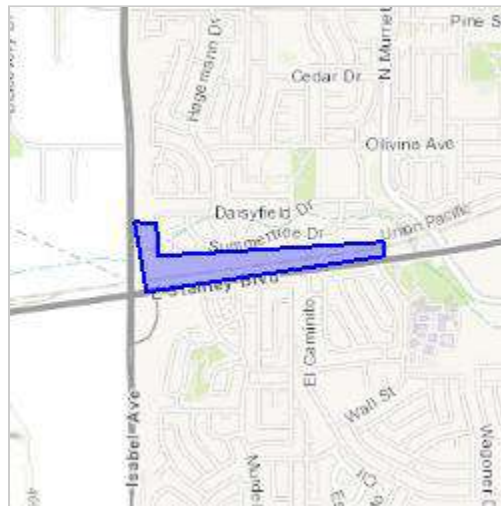
Project Name: Stanley Reach Stabilization

Project Type: WATER SUPPLY / DELIVERY

Project Description: Flood control channel maintenance

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/37.67780011731648N121.7981944502134W>



Counties: Alameda, CA

Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Birds

NAME	STATUS
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered

Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) <i>Masticophis lateralis euryxanthus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5524	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
San Bruno Elfin Butterfly <i>Callophrys mossii bayensis</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3394	Endangered
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Palmate-bracted Bird's Beak <i>Cordylanthus palmatus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1616	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix C

Mitigation Monitoring and Reporting Program



MITIGATION MONITORING AND REPORTING PROGRAM, ZONE 7 STANLEY REACH STABILIZATION PROJECT

Impact	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Air Quality				
	<p>Mitigation Measure AQ-1: Implement BAAQMD Basic Construction Mitigation Measures.</p> <p>The following BAAQMD Basic Construction Mitigation Measures are applicable to the Project, and shall be implemented by Zone 7's construction contractor(s) to reduce emissions of fugitive dust and equipment exhaust:</p> <ul style="list-style-type: none"> • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day, or more if needed. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed (either manually using hand tools, or by using wet power vacuum street sweepers if deemed necessary) at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 mph within the Project area. • 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 [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • Post a publicly visible sign with the telephone number and person to contact at Zone 7 (or its designee) regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. 	<p>Contractor is responsible for implementation of all air quality control measures. Contractor to provide and post required signage pending Zone 7 review and approval.</p>	<p>Signage to be posted at the start of construction.</p> <p>All other mitigation measures to be implemented during construction.</p>	<p>Contractor shall perform daily inspections and confirm with Zone 7 that measures are being implemented.</p> <p>Contractor shall be responsible for identifying any lapses or issues, rectifying them, and notifying Zone 7.</p>

MITIGATION MONITORING AND REPORTING PROGRAM, ZONE 7 STANLEY REACH STABILIZATION PROJECT (CONTINUED)

Impact	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Biological Resources				
	<p>Mitigation Measure BIO-1: Preconstruction Surveys and Worker Training.</p> <p>Zone 7 shall implement measures to avoid and minimize potential adverse effects on California red-legged frog and western pond turtle. Prior to conducting work and during work, the following measures shall be implemented.</p> <ol style="list-style-type: none"> 1. Instream disturbances shall be performed during the dry season when flows cease in the Project area (e.g., May 1 to October 31). Additionally, upstream water releases shall be reduced during the construction period to minimize the likelihood of animal movement through the Project area during construction. 2. A qualified biologist shall perform a preconstruction survey of the Project area prior to construction to verify that California red-legged frogs and western pond turtles are not present in work areas. General minimum qualifications for the qualified biologist are a 4-year degree in biological sciences or other appropriate training and/or experience in surveying, identifying, and handling California red-legged frogs and western pond turtles. 3. In the event that standing water is present in the sediment basin at the time of construction, a qualified biological monitor shall perform periodic inspections of the project site to verify the absence of California red-legged frogs and western pond turtles. 4. A biological resource education program shall be provided for construction crews and contractors before construction activities begin. The program shall describe the life history and identification of the California red-legged frog and western pond turtle, protective measures to be implemented if sensitive species are identified or suspected to be in the work area (i.e., immediate notification of the biological monitor, and temporary protective buffers), and penalties for handling or harming these species. 5. If a California red-legged frog or western pond turtle is located, work shall be ceased in the immediate area and the U.S. Fish and Wildlife Service or California Department of Fish and Wildlife shall be notified before work is reinitiated. 6. During work, all trash that may attract predators shall be properly contained, removed from the work area, and disposed of regularly. Zone 7 or its contractor shall remove all trash and construction debris from work area on a daily basis. 	<p>Zone 7 shall retain a qualified biologist to conduct preconstruction surveys.</p> <p>Zone 7 shall retain a qualified biologist to conduct a worker training session for environmental awareness. Contractor responsible for requiring all personnel to attend the training session.</p> <p>Zone 7 shall contact U.S. Fish and Wildlife Service or California Department of Fish and Wildlife if a California red-legged frog or western pond turtle is located.</p>	<p>Prior to construction.</p> <p>Prior to construction.</p>	<p>Zone 7 shall contact USFWS and/or CDFW if a California red-legged frog or California tiger salamander are found during preconstruction surveys.</p> <p>Zone 7 and its contractors shall retain a record of employees that have attended the training.</p> <p>Zone 7 shall have daily onsite project monitoring.</p>

MITIGATION MONITORING AND REPORTING PROGRAM, ZONE 7 STANLEY REACH STABILIZATION PROJECT (CONTINUED)

Impact	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Biological Resources				
	<p>Mitigation Measure BIO-2: Pre-Construction Bird Surveys.</p> <p>If construction or vegetation removal must be performed during the nesting period (February 1 through August 31), a qualified biologist shall survey the work area to verify the presence or absence of nests no more than 7 days prior to the start of construction activities, including the clearance of vegetation. If no nests are found and the site is cleared of vegetation, no further survey will be required. If active nests are observed, the construction contractor, in consultation with a qualified biologist, shall establish buffer zones around nest areas. Typical nest buffers are 100 feet for passerine birds, depending upon the nature of proposed activities and the sensitivity of the identified bird to disturbance, and 150 to 250 feet for raptors. Construction activities shall be avoided or modified within the buffer area until young birds have fledged, which shall be confirmed by the qualified biologist. Buffer sizes may be reduced from the initially established distances following review by the qualified biologist and/or coordination with California Department of Fish and Wildlife.</p>	<p>Zone 7 shall be responsible for implementing all biological surveys and monitoring.</p> <p>Contractor shall notify Zone 7 immediately should they encounter any bird nests, or behavior that suggests nesting in the Project area.</p> <p>Contractor shall establish protections (e.g., cones, flagging) around the buffer zones if needed as directed by Zone 7's qualified biologist.</p> <p>Contractor shall be responsible for proper installation, removal and disposal of protective measures as determined by Zone 7 in consultation with a qualified biologist</p>	Prior to, and during construction.	<p>Zone 7 shall have daily onsite project monitoring.</p> <p>Zone 7, in consultation with a qualified wildlife biologist, shall determine the buffer width and the types of construction activities allowed or prohibited within the buffer.</p> <p>Zone 7 shall be responsible for notifying CDFW or U.S. Fish and Wildlife Service, as needed.</p>
	<p>Mitigation Measure BIO-3: Avoid, Minimize and Mitigate for Impacts to Wetlands and Waters.</p> <p>During construction, certified weed-free permanent and temporary erosion control measures (e.g., fabric wattles) shall be implemented to minimize erosion and sedimentation into waters during and after construction. Reconstruction of rock slope protection with rip rap at Site 3 shall include tubes for placement of willows. Revegetation of temporarily impacted areas shall include willows, native grasses, and other native plant species.</p> <p>In addition, Zone 7 shall obtain and comply with necessary conditions for permits for wetland impacts from the USACE, CDFW, and the Regional Water Quality Control Board. The permits shall specify the amount of wetland to be impacted and include conditions for construction and restoration. Zone 7 shall comply with all permit conditions for temporary and permanent wetland impacts, including mitigation at 1:1 or other approved ratio.</p>	<p>Zone 7 shall be responsible for implementing all necessary conditions required for permit compliance.</p> <p>Contractor shall be responsible for proper installation and implementation of temporary erosion control measures.</p>	During and after construction.	<p>Zone 7 shall have daily onsite project monitoring for implementation of temporary erosion control measures and placement of revegetation materials.</p> <p>Zone 7 shall be responsible for informing and complying with the permit requirements of the regulatory agencies overseeing wetland impacts.</p>

MITIGATION MONITORING AND REPORTING PROGRAM, ZONE 7 STANLEY REACH STABILIZATION PROJECT (CONTINUED)

Impact	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Cultural Resources				
	<p>Mitigation Measure CUL-1: Inadvertent Discovery of Cultural Resources.</p> <p>If prehistoric or historic-era archaeological resources are encountered, all construction activities within 100 feet shall halt. The Zone 7 Water Agency shall be notified. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include deposits of metal, glass, and/or ceramic refuse. A Secretary of the Interior-qualified archaeologist shall inspect the findings within 24 hours of discovery. If it is determined that the Project could damage a significant archaeological resource, the Zone 7 Water Agency shall adjust the Project design to avoid any adverse effects. If avoidance is not feasible, a qualified archaeologist shall prepare and implement a detailed Archaeological Resources Management Plan in consultation with the State Historic Preservation Officer, the Zone 7 Water Agency, and, for prehistoric resources, the appropriate Native American representative to resolve potential adverse effects to historic properties, including significant archaeological resources.</p>	<p>Contractor shall be responsible for stopping work if any potential archaeological resource is discovered, and will notify the Zone 7 project manager.</p> <p>Zone 7 shall contact and retain the qualified archaeologist.</p>	<p>During construction.</p>	<p>Zone 7 shall be responsible for informing and complying with the requirements of the regulatory agencies overseeing archaeological resources.</p>
	<p>Mitigation Measure CUL-2: Inadvertent Discovery of Human Remains.</p> <p>In the event of discovery of any human remains during Project implementation, such activities within 100 feet of the find shall cease until the Alameda County Coroner has been contacted to determine that no investigation of the cause of death is required. The Native American Heritage Commission shall be contacted within 24 hours if it is determined that the remains are Native American. The Commission shall then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn shall make recommendations to the Zone 7 Water Agency for the appropriate means of treating the human remains and any grave goods.</p>	<p>Contractor shall be responsible for stopping work if any potential human remains are discovered, and will notify the Zone 7 project manager.</p> <p>Zone 7 shall contact the County coroner. Zone 7 will also contact the NAHC and Most Likely Descendant(s) if remains are thought to be Native American.</p>	<p>During construction.</p>	<p>Zone 7 shall be responsible for seeing that the remains are handled in accordance with all applicable laws and regulations.</p>
Geology and Soils				
	<p>Mitigation Measure GEO-1: Inadvertent Discovery of Paleontological Resources.</p> <p>Prior to construction, a qualified paleontologist meeting the standards of the Society of Vertebrate Paleontology (SVP) with expertise in California paleontology shall develop a paleontological resources training program for all construction and field workers involved in ground-disturbing activities that details the recognition and importance of paleontological resources, and establishes accidental discovery procedures should paleontological resources be encountered during construction.</p>	<p>Contractor shall be responsible for stopping work if any potential paleontological resource is discovered, and will notify the Zone 7 project manager.</p> <p>Zone 7 shall contact and retain the qualified paleontologist.</p>	<p>During construction.</p>	<p>Zone 7, as needed.</p>

MITIGATION MONITORING AND REPORTING PROGRAM, ZONE 7 STANLEY REACH STABILIZATION PROJECT (CONTINUED)

Impact	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Geology and Soils (cont.)				
	<p>Paleontological monitoring is necessary for all ground-disturbing activities that occur in previously undisturbed formations mapped as Pleistocene-age Alluvium and/or Pliocene and Pleistocene-age Livermore Gravels. Paleontological monitoring shall be conducted by a qualified paleontological monitor that meets the standards of the SVP.</p> <p>If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, cast, molds, or impressions are discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified paleontologist can assess the nature and importance of the find and, if necessary, develop appropriate salvage measures in conformance with SVP standards.</p>			
Hazards and Hazardous Materials				
	<p>Mitigation Measure WIL-1: Fire Safety Practices.</p> <p>Please refer to Wildfire below.</p>	See below, Wildfire.	See below, Wildfire.	See below, Wildfire.
Tribal Cultural Resources				
	<p>Mitigation Measure CUL-1: Inadvertent Discovery of Cultural Resources.</p> <p>Please refer to Cultural Resources above.</p>	See above, Cultural Resources.	See above, Cultural Resources.	See above, Cultural Resources.
Wildfire				
	<p>Mitigation Measure WIL-1: Fire Safety Practices.</p> <p>Zone 7 shall require the construction contractor to ensure that the following fire safety construction practices are implemented:</p> <ul style="list-style-type: none"> • Earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildland fire; • Appropriate fire suppression equipment shall be maintained at the construction site; • Flammable materials shall be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame; and • Construction personnel shall be trained in fire safe work practices, use of fire suppression equipment, and procedures to follow in the event of a fire. 	Contractor shall be responsible for implementation of all hazards and hazardous materials mitigation measures.	Prior to, and daily during construction.	<p>Contractor shall confirm with Zone 7 that measures are being implemented.</p> <p>Contractor shall be responsible for identifying any lapses or issues, rectifying them, and notifying Zone 7.</p>

