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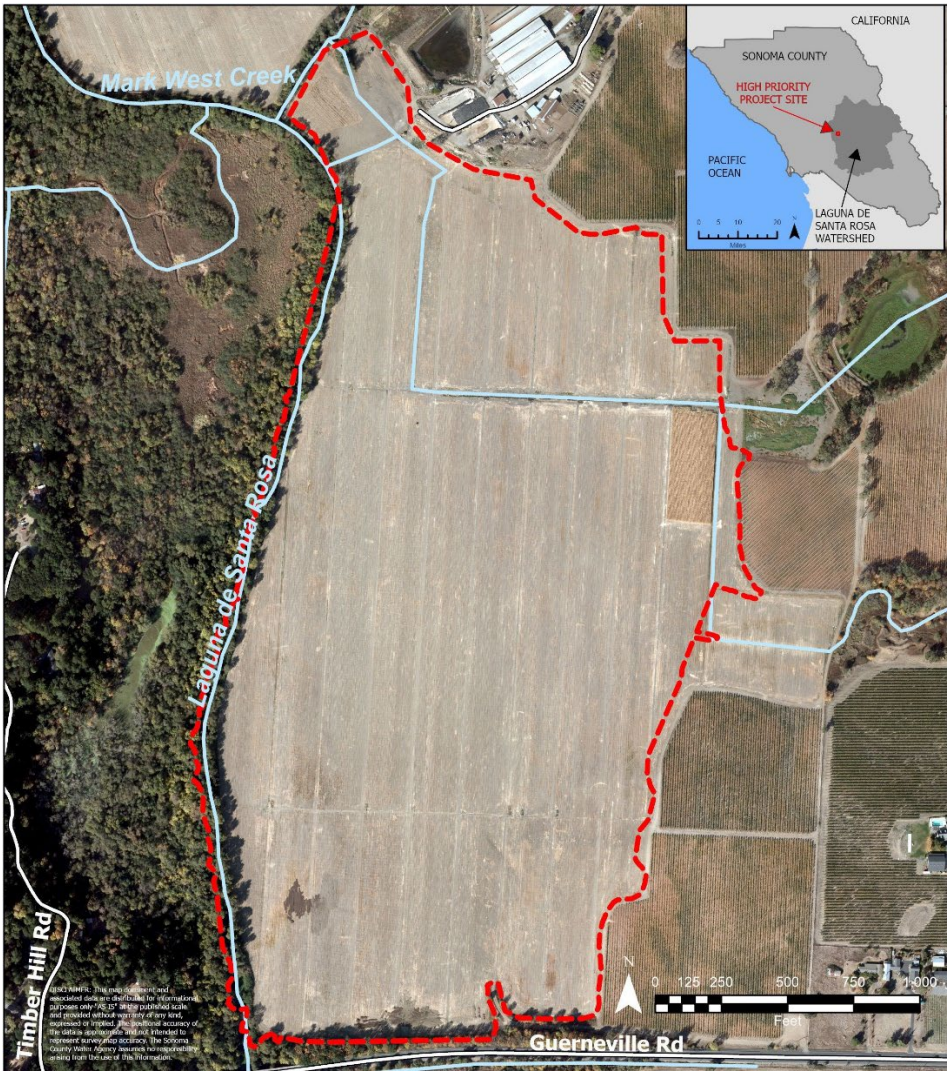
LAGUNA-MARK WEST CREEK WATERSHED MASTER RESTORATION PLANNING PROJECT – HIGH PRIORITY PROJECT

DRAFT INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION OF ENVIRONMENTAL IMPACT



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Posting and Review Period: February 23, 2023 – March 27, 2023

American Disabilities Act Compliance

This Initial Study and Proposed Mitigated Negative Declaration of Environmental Impact for the Proposed Project was prepared in compliance with requirements under the Americans with Disabilities Act (ADA). The ADA mandates that reasonable accommodations be made to reduce "discrimination on the basis of disability." As such, the Sonoma County Water Agency is committed to ensuring that documents we make publicly available online are accessible to potential users with disabilities, particularly blind or visually impaired users who make use of screen reading technology.

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CHAPTER 1 Introduction

1.0 Introduction

The Sonoma County Water Agency (Sonoma Water) was created in 1949 by the California Legislature as a special district to provide flood protection and water supply services. The members of the Sonoma County Board of Supervisors are Sonoma Water's Board of Directors. Sonoma Water's powers and duties authorized by the California Legislature include the production and supply of surface water and groundwater for beneficial uses, control of flood waters, generation of electricity, provision of recreational facilities (in connection with the Sonoma Water's facilities), and the treatment and disposal of wastewater.

Sonoma Water is the project proponent and lead agency in accordance with the California Environmental Quality Act (CEQA) for the Laguna-Mark West Creek Master Restoration Planning Project – High Priority Project (Proposed Project). This Initial Study and Mitigated Negative Declaration (IS/MND) has been prepared to provide decision makers, the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the Proposed Project. This IS/MND was prepared pursuant to the requirements of CEQA (California Public Resources Code Sections 21000 et seq.), the State CEQA Guidelines (Code of Regulations, Title 14, Division 6, Chapter 3), and Sonoma Water's Procedures for the Implementation of CEQA. This IS/MND is an informational document to be used in the decision-making process. After completion of the public review period for this document, this IS/ MND, along with a summary of comments submitted and the response to those comments, will be brought before Sonoma Water's Board of Directors for their consideration.

The Proposed Project would restore lost wetland habitat along the Laguna de Santa Rosa (Laguna) on a 119.43-acre project site. The Laguna is a low-gradient meandering stream that has a shallow channel and broad adjacent floodplain, which is inundated most of the winter and spring. Historically, seasonal and perennial riparian, marsh, and other wetland habitats extended along the Laguna far beyond the main channel. However, much of the Laguna wetlands have been impacted by urban and agricultural development.

1.1 Initial Study Review

Pursuant to Sections 15073.5 and 15105[b] of the CEQA Guidelines, Sonoma Water is circulating this document for a 30-day public and agency review period. Agencies and interested members of the public are invited to review and comment on the IS/MND. All comments received prior to 5:00 p.m. on the date identified for closure of the public comment period in the Notice of Availability / Notice of Intent to Adopt (Appendix A) will be considered. Please include a name, address, and telephone number of a contact person for all future correspondence on this subject.

Questions and comments on this project can be sent to:

David Cook
Sonoma County Water Agency
404 Aviation Blvd.
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Or email comments to: David.Cook@scwa.ca.gov

1.2 Summary of Findings

The IS/MND describes the Proposed Project and its environmental setting, including the Project site's existing conditions and applicable regulatory requirements. This IS/MND also evaluates potential environmental impacts from the Proposed Project to the following resources:

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

Potentially significant effects were identified for air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, transportation, and tribal cultural resources. The Proposed Project incorporates measures that would reduce all impacts to a less-than-significant level.

CHAPTER 2

2.0 Project Location and Description

2.1 Project Location and Regional Setting

The Proposed Project is located in Sonoma County, California, approximately five miles west of the City of Santa Rosa (Figure 2-1). The Proposed Project site is within the 254-square-mile Laguna de Santa Rosa (Laguna) watershed, which drains to the Russian River. The Project site is along the Laguna between the confluences of Santa Rosa and Mark West creeks (Figure 2-2). The site is located on the western edge of the Laguna watershed and is bound by vineyards and agricultural lands to the north and east, Guerneville Road Bridge to the south, and the Laguna channel to the west.

Convert Engineered Channel to Backwater

Flows would be directed from the existing engineered Laguna channel into the realigned historical channel by a berm at the upstream end of the Project site (Figure 2-9). The berm would be approximately 90 feet wide at the channel confluence and extend downstream approximately 700 feet in the engineered channel. This long plug will redirect flows into the realigned channel and Project site. The berm and backfilled plug material would consist of 2,275 CY of excavated sediment from the historical channel excavation, large woody debris, and boulders. At the two punch-through sites on the east side of the engineered channel, an approximately 150-foot section and an 80-foot section of bank would be notched to connect the new backwater with the new Laguna channel. Excavated material from the punch-throughs would total 752 CY of sediment. The engineered channel below the plug would continue to receive water during winter flooding through open connections at the two punch-throughs and at the downstream convergence with the new channel. The engineered channel would function as a backwater and a secondary high flow channel but may slowly fill with sediment during flood events (Figure 2-7). Construction of the berm and two punch-throughs would require the removal of 79 riparian trees with a diameter at breast height (dbh) of greater than 4 inches in an area of 0.09 acre; however, the Proposed Project would restore 28.43 acres of mixed riparian forest (Table 2-1).

2.2 Project Background

Historically, the Laguna within the Proposed Project site supported valley freshwater marsh bounded by small areas of oak savanna/vernal pool complex and oak savanna at higher elevations along the eastern boundary (Figure 2-3). The western boundary of the Proposed Project site contained willow forested wetland, mixed riparian forest, and wet meadow habitat types (SFEI 2020).

Currently, the Proposed Project site is farmed wetland producing corn (Figure 2-1). The site is difficult to farm due to frequent and prolonged inundation by Laguna floodwaters and backwater from the Russian River that forms during fall, winter, and spring storms (Figure 2-4). The

Figure 2-1. Laguna-Mark West Creek Watershed Master Restoration Planning Project – High Priority Project vicinity.

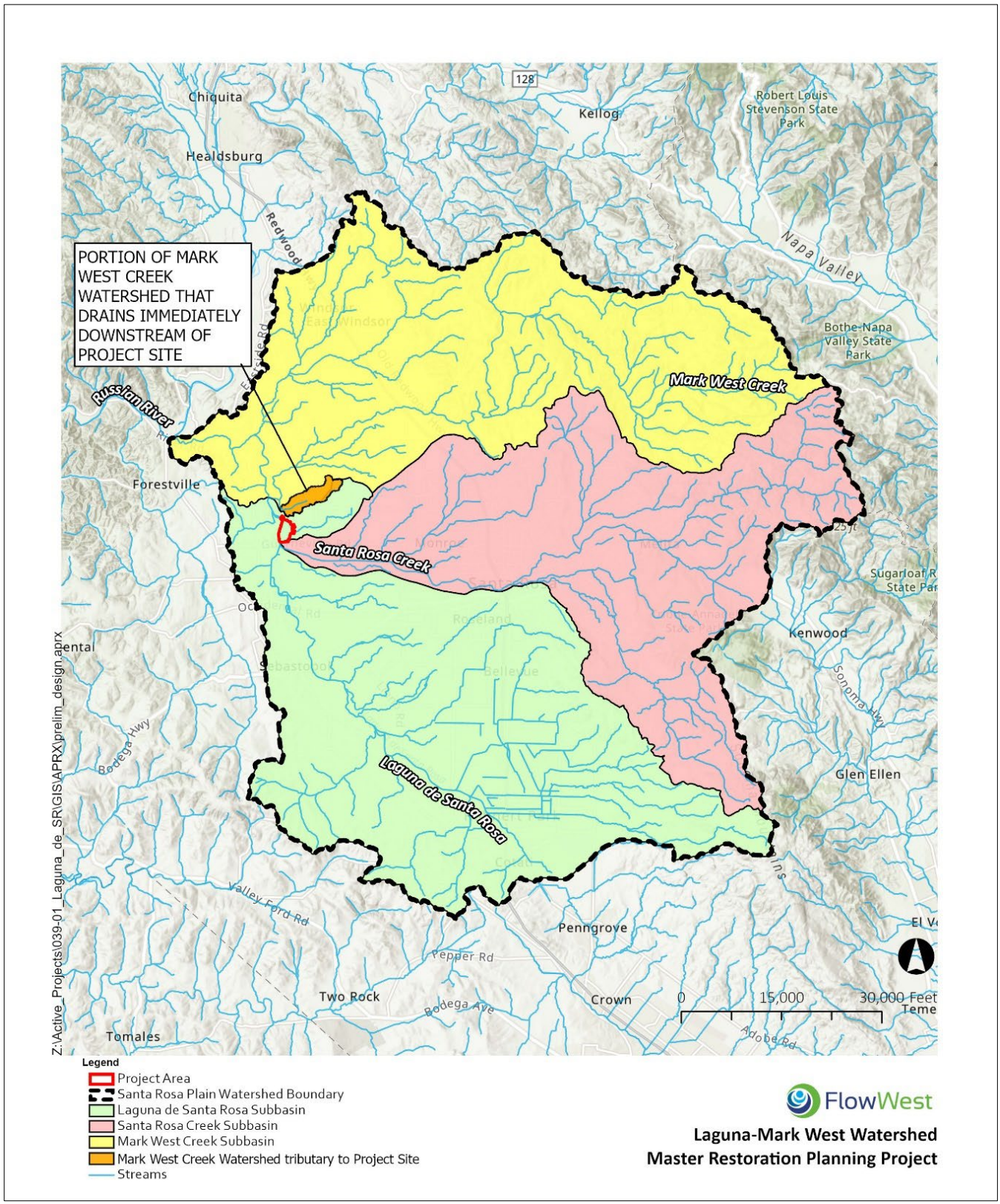

Figure 2-2. Project Location within Laguna de Santa Rosa watershed.

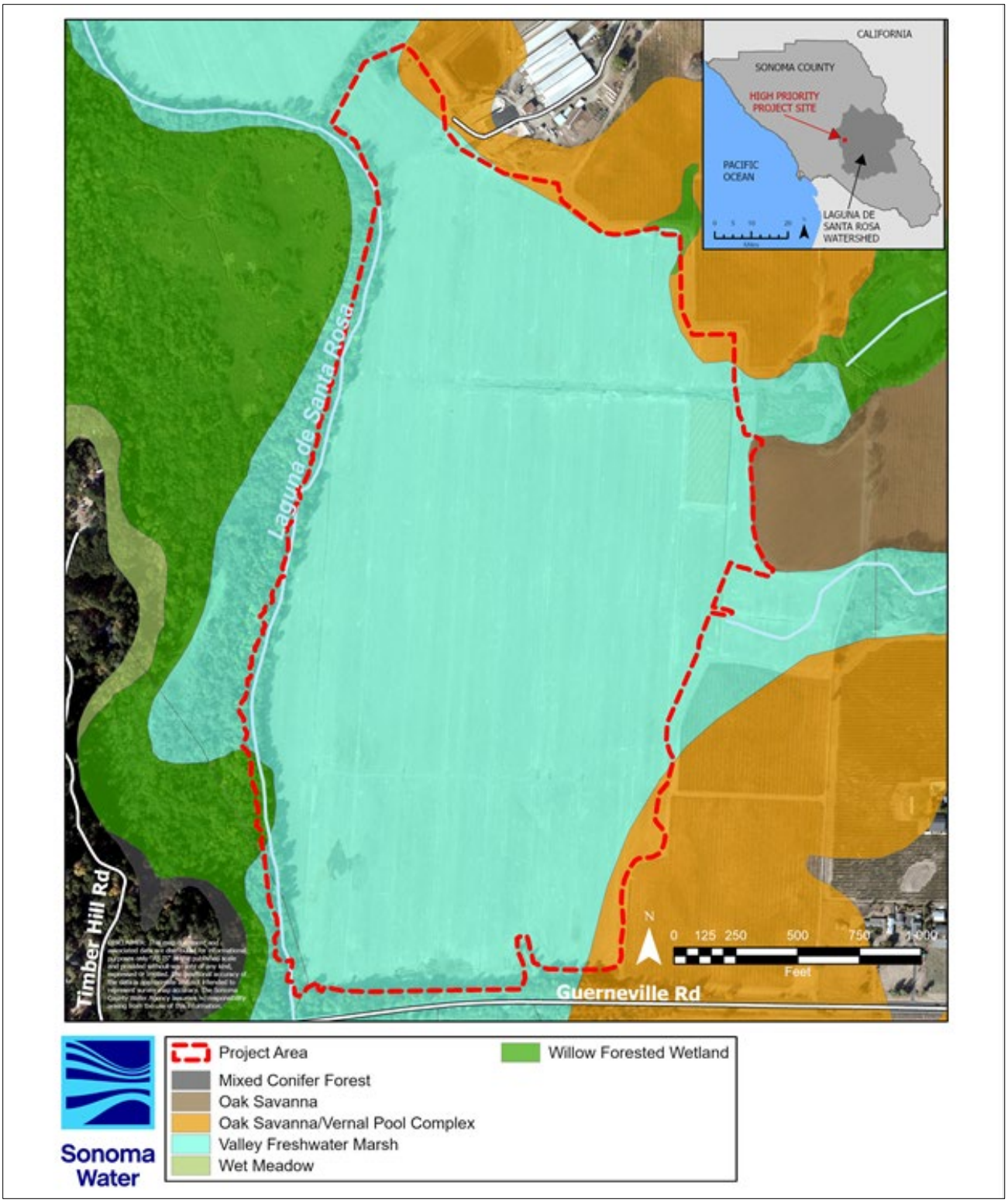

Figure 2-3. Historic habitats at the Laguna-Mark West Creek Watershed Master Restoration Planning Project – High Priority Project.

Figure 2-4. Seasonal flooding and backwater from the Russian River on March 28, 2018, Laguna-Mark West Creek Watershed Master Restoration Planning Project – High Priority Project.

Proposed Project site also includes two small seasonal tributaries that drain to the Laguna (Figures 2-5 and 2-6), dirt roads, engineered Laguna channel, and vegetated areas. The small tributaries route flows across the field to the Laguna as winter flooding recedes. Before planting operations begin each year, debris deposited on the field during flooding is collected for disposal. Corn is typically planted in April and harvested by September and the field lays fallow for the remainder of the year. In addition to the agricultural use, native vegetation consists of wetlands and riparian forest along the Laguna.

2.3 Project Purpose and Need

The purpose of the Proposed Project is to restore freshwater marsh, wet meadow, and riparian forest habitats along the Laguna. The Proposed Project site historically supported these habitat types prior to agricultural development. By realigning the Laguna channel to its historical path, the Proposed Project site would inundate more gradually during floods and drain slowly as floodwaters recede than under current conditions. This inundation pattern would support and sustain the proposed habitat types.

2.4 Project Description

The Proposed Project site encompasses approximately 119.43 acres along a 3,200-foot-long reach of the Laguna. The site is within the 100-year floodplain of the perennial Laguna. Most of the site is contained within an elevation difference of only two feet. The site is relatively flat, but there are areas of topographic diversity primarily on the east and west fringes. The Proposed Project site contains clay-rich soils that decrease infiltration and increase ponding of water.

The Proposed Project would restore the Laguna channel and wetland habitats, including 44.64 acres of freshwater marsh, 25.03 acres of wet meadow, and 28.43 acres of mixed riparian forest where there is currently farmed wetland (Table 2.4-1). Aquatic habitat along channels would increase to 21.33 acres. The restoration actions would consist of reestablishing the historic alignment of the Laguna, converting the existing engineered channel to a backwater, connecting two small east-west flowing tributary drainages to the new channel, and revegetation with native plants. The new channel and tributary connections would form a meandering stream configuration representative of the historic channel at the project site. The new channel and floodplain would be excavated to inundate newly established wetland habitat types and to connect existing tributaries traversing the site. The Proposed Project would also include an access path to allow for trash and debris removal. The following project actions are described in detail below and summarized in Table 2.4-2.

- Realign Historical Channel
- Convert Engineered Channel to Backwater
- Connect Two Small Tributaries
- Construction of Access Path
- Revegetation
- Restore Freshwater Marsh, Wet Meadow, and Mixed Riparian Forest

Figure 2-5. Small tributary ditch across the farmed field that drains to the Laguna. Looking west toward the Laguna.

Figure 2-6. Small tributary drainage ditch adjacent to farmland in the northern portion of the project area.

Realign Historical Channel

The realigned historical channel would flow onto the upstream (southern) end of the Proposed Project site and meander 3,200 feet downstream before reconnecting with the existing channel at the northern end of the site (Figure 2-7). The proposed realigned historical channel would consist of low- and high-flow channels that contain broad and shallow floodplain of the Laguna. The dimensions of the historic channel would range from 1-2 feet deep and 90-400 feet wide, with a total elevation change of 2 feet (0.10%), and result in the excavation of 30,866 cubic yards (CY) of sediment. Sediment transport through the project area post-construction would be maintained by excavating a low-flow channel approximately 6 feet wide and 8 inches deep bordered by a high-flow channel constructed by grading a 2% slope from the top of the low-flow channel to the existing grade (Figure 2-8). Most of the excavation to create the high-flow channel would be at the up- and downstream ends of the realigned historical channel. The high-flow channel would be graded smooth and contoured with the adjacent floodplain. Surplus soil would be used onsite as described in the "Construction" section below.

Table 2.4-1. Habitat types at the Laguna-Mark West Creek Watershed Master Restoration Planning Project – High Priority Project.

Project	Farmland (ac)	Aquatic Channel (ac)	Freshwater Marsh (ac)	Mixed Riparian Forest (ac)	Wet Meadow (ac)	Access Path (ac)	Total (ac)
Existing Conditions	115.60[a]	3.83[b]	0	(3.83)[c]	0	0	119.43
Construction Disturbance [riparian trees removed]	49.24[d]	0.62[e]	0	0.09[f] [79 trees]	0	(1.30)[g]	49.95 [79 trees]
Post-construction Restoration	0[i]	21.33[h]	44.64	28.43	25.03	(1.30)[g]	119.43

[a]Existing land actively farmed consists of 114.85 acres of farmed wetland and 0.75 acre of two small seasonal tributary ditches totaling 115.60 acres (see Table 3.4-1).
[b]Existing engineered Laguna channel.
[c]Existing mixed riparian forest occurs over engineered channel.
[d]Includes re-construction of historical channel (13.68 ac), portions of engineered channel punch-throughs (0.35 ac), two small tributaries (4.08 ac), and upstream grading area (16.56 ac), middle grading area (5.28 ac) and downstream grading area (9.29 ac)
[e]Engineered channel berm.
[f]Portions of engineered channel berm punch-throughs (0.09 ac).
[g]Excluded from total. Access path will be integrated in freshwater marsh, mixed riparian forest, and wet meadow habitats.
[h]Historical channel realignment (13.68 ac), engineered channel punch-throughs (0.44 ac), backwater (3.13 ac), two small tributaries (4.08 ac)
[i]Restored wet meadow is compatible for livestock grazing,

Table 2.4-2. Construction dimensions for the Laguna-Mark West Creek Watershed Master Restoration Planning Project – High Priority Project.

Project Area Feature	Linear Distance (ft)	Area (acre)	Excavation and Fill			
			Excavation (CY)	Onsite Fill[a] (CY)	Imported Fill (CY)	Onsite Sediment Balance[a] (CY)
Historical Channel Realignment	3,200	13.68	-30,866	0		-30,866
Engineered Channel Berm	700	0.62	-4	2,235	44[b]	2,275
Engineered Channel Punch-throughs	230[c]	0.44[c]	-752	4		-748
Two Small Tributaries	2,550[d]	4.08[d]	-5,025	57		-4,968
Access Path	4,600[e]	(1.30)[e]	-1,022		1,022[e]	0
Site Grading	2,460[f]	31.13[f]	-3,595	37,902		34,307
TOTAL	**13,740**	**49.95**	**-41,264**	**40,198**	**1,066**	**0**

[a]Material from onsite excavated sources.
[b]Boulders and large woody debris.
[c]Includes upstream channel punch-through (150 ft, 0.36 ac) and downstream channel punch-through (80 ft,0.08 ac).
[d]Includes upstream tributary connection (1,400 ft, 2.08 ac) and downstream tributary connection (1,150 ft, 2.00 ac).
[e]Decomposed granite path will be integrated into area graded for freshwater marsh, mixed riparian forest, and wet meadow habitat.
[f]Includes three fill grading areas shown on Figure 2-7. Does not include areas graded for historical channel realignment (13.68 ac), engineered channel berm (0.62 ac), engineered punch-throughs (0.44 ac), two small tributaries (4.08 ac), or access path (1.30 ac)

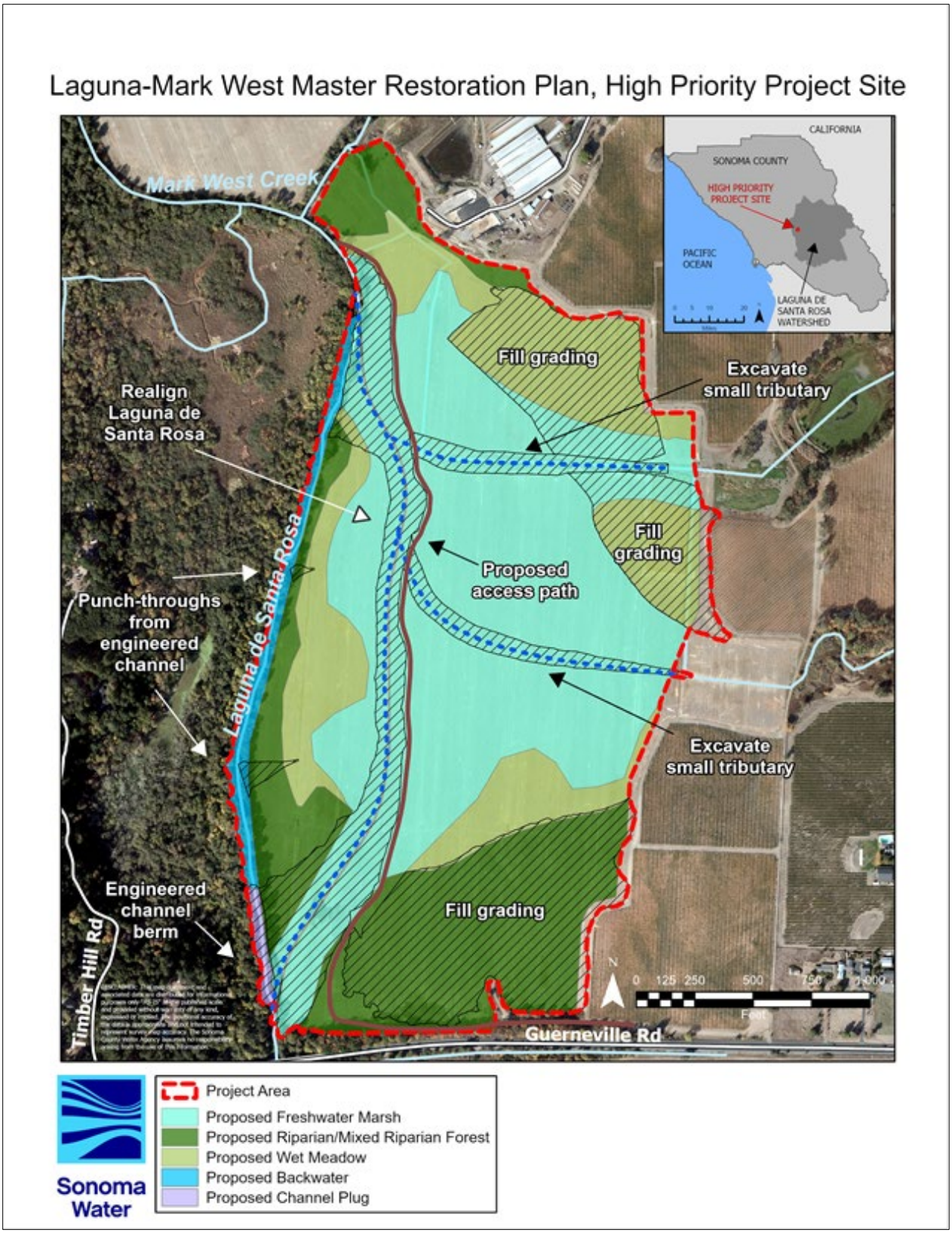

Figure 2-7. Elements of the Laguna-Mark West Creek Watershed Master Restoration Planning Project–High Priority Project.

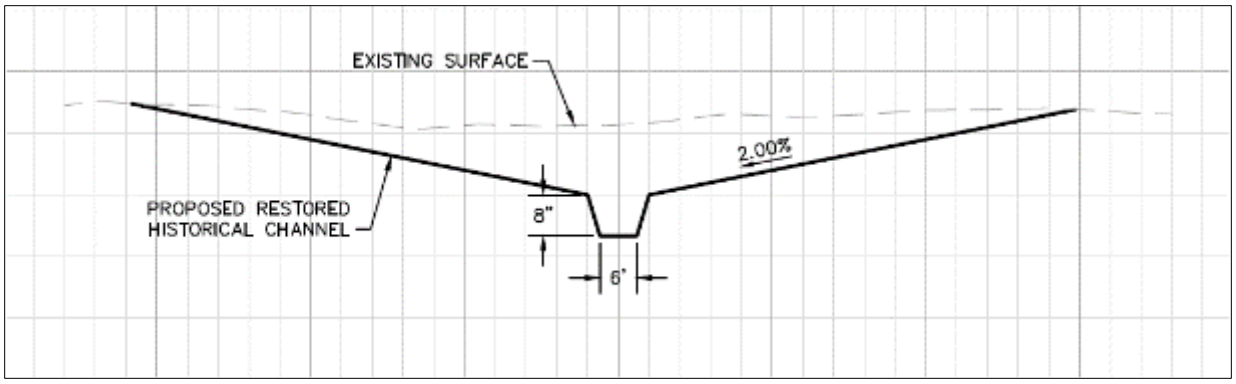

Figure 2-8. Typical channel dimensions of the proposed realigned Laguna de Santa Rosa channel.

Connect Two Small Tributaries

Two small existing east-west flowing tributaries would be connected to the new historical channel by grading two channels that have a bottom width of 6 feet and banks that slope upwards 5% to the existing grade (Figure 2-7; Figure 2-10). Approximately 5,025 CY of material would be excavated along 1,400 linear feet of the upstream tributary and 1,150 linear feet of the downstream tributary totaling 2,550 linear feet. Surplus soil would be used onsite as described in the “Construction” section below.

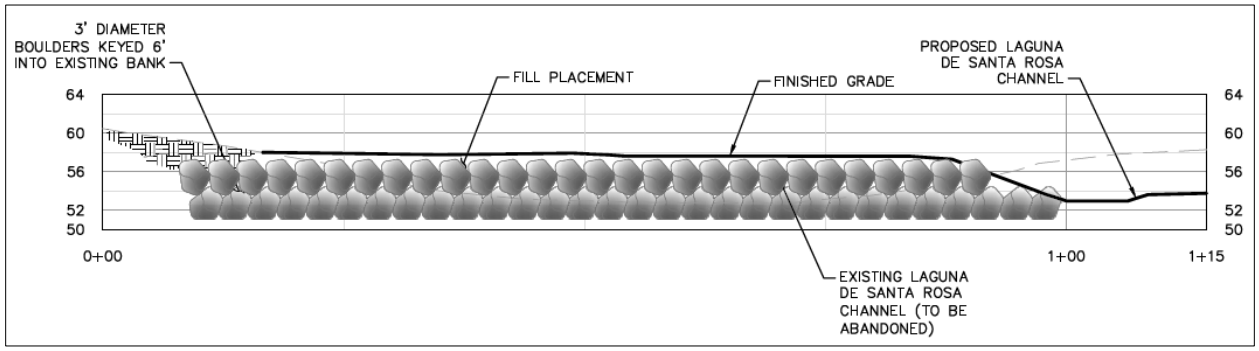

Figure 2-9. Berm design detail for existing Laguna channel at the upstream connection to the realigned historical channel, looking downstream.

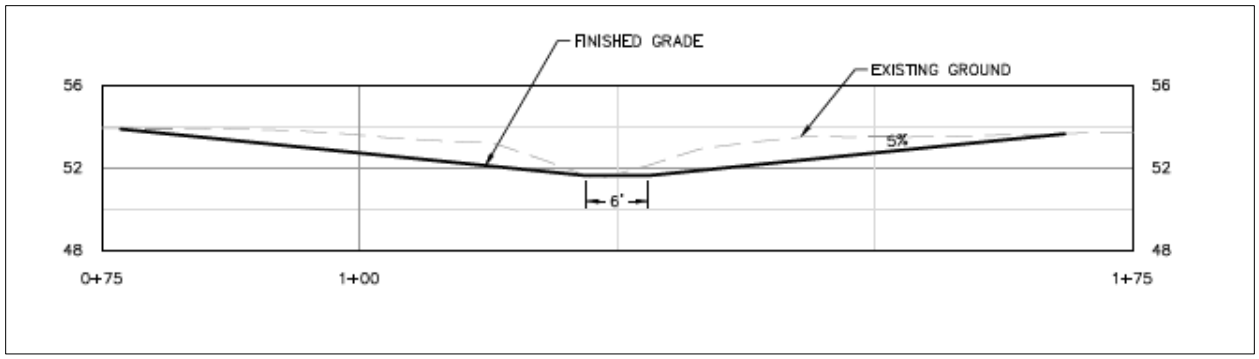

Figure 2-10. Design detail for connecting east-west flowing tributary channels that cross the project site.

Access Path

The access path would follow along the existing access route at the south side of the Proposed Project site parallel to Guerneville Road and then connect to the east bank of the realigned historical channel (Figure 2-7). The access path would be approximately 4,600 feet long, 12 feet wide, excavated 6 inches deep, and filled to match the existing grade with decomposed granite, or similar gravel material, totaling 1.30 acres in area. The access path would be used during the dry season for periodic maintenance, such as trash and debris removal. The path would not require regular maintenance.

Revegetation

Once the Proposed Project's topographic features are constructed the site would be revegetated with plant assemblages characteristic of the following habitat types: freshwater marsh, wet meadow, and mixed riparian forest (Figure 2-7**;** Table 2.4-1). The number of plantings are summarized in Table 2.4-3. These plantings are anticipated to supplement the natural recruitment that the new hydrologic regime in the project area will facilitate from seed sources in the Laguna. A list of native plant species for revegetation are in Table 2.4-3. Freshwater marsh would encompass approximately half of the site. The freshwater marsh would be bordered by wet meadow as it transitions to higher, drier areas of the site. In addition, the realigned channel and two small tributaries would be planted with freshwater marsh vegetation.

Table 2.4-3. Restoration plantings for the Laguna-Mark West Creek Watershed Master Restoration Planning Project – High Priority Project.

Habitat	Habitat (%)	Common Name	Scientific Name	Application	Rate # Plants (lbs/acre)
Fresh-water marsh	20	River tule	*Scirpus fluventialis*	Hydroseed	(10)
	10	Panicled bulrush	*Scirpus microcarpus*	Hydroseed	(10)
	5	Water smartweed	*Persicaria amphibia*	Hydroseed	(5)
	10	Spike rush	*Eleocharis macrostachya*	Hydroseed	(5)
	30	California bulrush	*Scirpus californica*	Hydroseed	(10)
	5	Ditch carrot	*Oenanthe sarmentosa*	10-ft center	1,250
	5	Bur-reed	*Sparangium eurycarpum*	10-ft center	1,250
	15	California cut grass	*Leersia oryzoides*	10-ft center	3,900
Wet meadow	5	Clustered field sedge	*Carex praegracilis*	Hydroseed	(5)
	10	Red fescue	*Festuca rubra*	Hydroseed	(10)
	20	Meadow barley	*Hordeum brachyantherum*	Hydroseed	(10)
	5	Nut sedge	*Cyperus eragrostis*	Hydroseed	(5)
	10	Creeping wild blue ryegrass	*Leymus triticoides*	Hydroseed	(5)
	5	Mugwort	*Artemisia douglasiana*	Hydroseed	(5)
	10	Santa Barbara sedge	*Carex barbarae*	10-ft center	1,103
	5	Slough sedge	*Carex obnupta*	10-ft center	551
	10	Baltic rush	*Juncus balticus*	10-ft center	1,103
	10	Spreading rush	*Juncus patens*	10-ft center	1,103
	10	Pacific rush	*Juncus effusus*	10-ft center	1,103
Mixed Riparian	5	California rose	*Rosa californica*	10-ft center	660
	10	Box elder	*Acer negundo*	10-ft center	1,321
	5	Spice bush	*Calycanthus occidentalis*	10-ft center	660
	10	Oregon ash	*Fraxinus latifolia*	10-ft center	1,321
	20	Arroyo willow	*Salix lasiolepus*	10-ft center	2,643
	20	Red willow	*Salix laevigata*	10-ft center	2,643
	10	Shining willow	*Salix lucida lasiandra*	10-ft center	1,321
	5	American dogwood	*Cornus stolonifera*	10-ft center	660
	5	Twinberry	*Lonicera involucrata*	10-ft center	660
	5	Pacific ninebark	*Physocarpus capitatus*	10-ft center	660
	5	White-stemmed raspberry	*Rubus leucodermis*	10-ft center	660

Mixed riparian forest would border much of the edges of the site at its highest elevations. These habitats are described below.

Freshwater Marsh

The Proposed Project would create 44.64 acres of freshwater marsh. However, the aquatic habitats along the channel and two tributaries are expected to be partially covered with marsh vegetation that would increase freshwater marsh to approximately 60.54 acres. Freshwater marsh would be planted with native species such as spikerush (*Eleocharis macrostachya*), California cut grass (*Leersia cryzoides*), and California bulrush (*Scirpus microcarpus*). This plant community is seasonally to semi-permanently flooded; soils generally have a high organic content and are usually saturated.

Wet Meadow

The Proposed Project would create approximately 25.03 acres of wet meadow. Wet meadow is a seasonal wetland type that experiences temporary to seasonal flooding and occurs in areas with poorly drained, clay-rich soils. Wet meadows are dominated by an herbaceous plant community. The Proposed Project would plant native species such as river tule (*Scirpus fluventialis*), red fescue (*Festuca rubra*), and spreading rush (*Juncus patens).*

Mixed Riparian Forest

The Proposed Project would create 28.43 acres of mixed riparian forest. However, the aquatic habitat along the channel is expected to be partially covered with mixed riparian forest that would increase riparian forest to approximately 30.35 acres. This plant community typically occurs along stream channels and floodplain. The Proposed Project would plant native species such as Oregon ash (*Fraxinus latifolia),* several species of willow (*Salix* sp.), and Pacific ninebark (*Physocarpus capitatus*).

Construction

Grading and Sediment Balance

The Proposed Project would include excavation and fill placement on a portion of the project site to create inundation patterns that support wetland habitats. Excavated sediment from construction and fill would be balanced onsite (Table 2.4-2). Excavated sediment from the historic channel, punch through notches, and two small tributaries would be reused onsite to fill the engineered channel berm (2,275 CY) and three lowland deficient areas (37,902 CY) to achieve wetland hydrologic requirements (Figure 2-7). Fill depths in the lowland areas would range from 0 to 3 feet deep. Excavated and backfilled areas would be graded smooth and conform to existing topography. Imported fill would be limited to boulders and large woody debris to construct the berm at the engineered channel and decomposed granite for the access path.

Construction Equipment

Required construction equipment would include, but would not be limited to, an excavator, dump trucks, water trucks, utility trucks and a backhoe/loader. Pneumatic and power hand tools, portable generators, and dewatering sump pumps would also be utilized.

Construction along the Laguna would occur during the summer months when surface flows are typically 0-5 cubic feet per second (cfs). All flows in the Laguna channel through the project area would need to be diverted around the work area during construction. Work areas would be isolated from flowing water using some type of imported barrier or material (water filled bladders, gravel cofferdams, etc.). Pumping from the upstream end of the work area to the downstream end of the work area would occur to bypass Laguna flows around the work area. The bypass pumping would result in the work area being dewatered during construction.

Duration of Construction

The Proposed Project site is typically inundated during the winter wet season from December through February. Therefore, construction would occur during the dry summer season between June 15 and October 15. Construction would be completed during one dry season and the Project would be operable in time for the next year's wet season. Construction activities would take place primarily during daytime hours from 7:00 a.m. to 7:00 p.m., Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturdays.

Construction Workforce, Staging Areas

The construction workforce would average 10 workers with a maximum of 12 workers at the site. The southeast corner of the site would be used as a staging and stockpile area.

Maintenance

Once Proposed Project is constructed, no operation would be part of the restoration activities. Maintenance would be performed on an as-needed basis.

Maintenance and monitoring would be required on an as-needed basis to maintain the ecological components of the project. This may include occasional site visits to ensure planting survival, removal of invasive plants, and removal of trash and debris. Maintenance staff would access the site via the access path. The path itself is not anticipated to require regular maintenance.

Sediment removal would not be a regular maintenance activity that occurs at the Proposed Project site, although small-scale and infrequent sediment removal may be needed to maintain channel design. Although the Proposed Project site is in a depositional reach of the Laguna, the area would mostly be left undisturbed for long periods of time in order to allow the native vegetation to establish.

2.5 Conformance with the General Plan and General Plan Designation

The Proposed Project site is located in an agricultural area that has been under cultivation since at least the 1950s. Much of the project site is planted annually with a single crop of corn and was last planted in 2022. Lands to the northeast and east consist of vineyards. Guerneville Road extends along the southern boundary of the site. A former dairy is located on the small hilltop immediately north of the site. Private, rural residences are located to the west of the Proposed Project site.

The Proposed Project site is subject to the land use policies and designations adopted in the Sonoma County General Plan 2020 (SCPRMD 2008). The Sonoma County General Plan 2020 contains a variety of goals, objectives, policies, programs, and implementation measures, which address several environmental resources and concerns including biological, cultural resources,

geologic hazards, hazards and hazardous materials, water quality, noise, public services and utilities, and transportation and traffic.

The Sonoma County General Plan 2020 Zoning and Land Use Designation for the Proposed Project site is Diverse Agriculture and Rural Residential, an area designated for agriculture and low-density rural residences (SCPRMD 2008).

The Proposed Project is consistent with applicable general plans and policies. Also, Sonoma Water would comply with County ordinances and zoning codes. County of Sonoma Zoning Code Regulation Article 65 (Riparian Corridor Combining Zone) Section 26-65-040 allows several activities including “stream maintenance and restoration carried out or overseen by the SCWA (Sonoma Water).”

The Project is also part of the habitat restoration prioritization process outlined in the 2020 Laguna de Santa Rosa Vision Document (SFEI 2020). This site is the first high priority project to advance to design for habitat restoration.

2.6 Other Public Agencies Whose Approval Is Required

The following are public entities and agencies that may require review of the project or which may have jurisdiction over the Proposed Project site:

1. Bay Area Air Quality Management District (BAAQMD)
2. California North Coast Regional Water Quality Control Board (NCRWQCB)
3. California Department of Fish and Wildlife (CDFW)
4. National Marine Fisheries Service (NMFS)
5. State Historic Preservation Office (SHPO)
6. Sonoma County Department of Transportation and Public Works
7. Sonoma County Permit & Resource Management Department (Permit Sonoma)
8. United States Army Corps of Engineers (USACE) – San Francisco District
9. United States Fish and Wildlife Service (USFWS)

Chapter 3

3.0 Environmental Checklist

The Proposed Project's environmental impacts were assessed based on the environmental checklist provided in Appendix G to the CEQA Guidelines. The checklist provides a summary of potential impacts that may result from implementation of the Proposed Project. In addition, each section below includes a discussion of the rationale used to determine the significance level of the Project's environmental impact for each checklist question. A list of environmental factors and summary of findings are below. The findings of each environmental analysis are included in Sections 3.1 through 3.21.

With regard to the checklist, a "No Impact" response indicates that the analysis concludes that the Proposed Project would not have the impact described. A "Less-than-Significant Impact" response indicates that the Proposed Project would not cause a substantial adverse change to the environment and mitigation is not required. A "Less Than Significant with Mitigation Incorporated" response indicates that the Proposed Project may cause a substantial adverse change to the environment, but that mitigation measure(s) have been identified that would reduce the impact to a less-than-significant level. A "Potentially Significant Impact" response indicates that the Proposed Project may cause a substantial adverse change to the environment and that the impact cannot be reduced to a less-than-significant level by incorporating mitigation measures. If a "Potentially Significant Impact" is identified, an environmental impact report must be prepared.

Each response is discussed at a level of detail commensurate with the potential for adverse environmental effect. Each question was answered by evaluating the Proposed Project as proposed, that is, without considering the effect of any added mitigation measures. The Initial Study includes a discussion of the potential impacts and identifies mitigation measures to substantially reduce those impacts to a level of insignificance where feasible. All references and sources used in the Initial Study are listed in the Reference section of the document.

Environmental Checklist and Summary of Potential Impacts

Environmental Factor	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Aesthetics	☐	☐	☒	☐
Agriculture and Forestry Resources	☐	☐	☒	☐
Air Quality	☐	☒	☐	☐
Biological Resources	☐	☒	☐	☐
Cultural Resources	☐	☒	☐	☐
Energy	☐	☐	☒	☐
Geology and Soils	☐	☒	☐	☐
Greenhouse Gas Emissions	☐	☐	☒	☐
Hazards and Hazardous Materials	☐	☒	☐	☐
Hydrology and Water Quality	☐	☒	☐	☐
Land Use and Planning	☐	☐	☐	☒
Mineral Resources	☐	☐	☐	☒
Noise	☐	☒	☐	☐
Population and Housing	☐	☐	☐	☒
Public Services	☐	☐	☐	☒
Recreation	☐	☐	☐	☒
Transportation	☐	☒	☐	☐
Tribal Cultural Resources	☐	☒	☐	☐
Utilities and Service Systems	☐	☐	☒	☐
Wildfire	☐	☒	☐	☐
Mandatory Findings of Significance	☐	☒	☐	☐

3.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☐	☒

Aesthetics Setting

Visual or aesthetic resources are generally defined as both the natural and built features of the landscape that contribute to the public's experience and appreciation of the environment. Depending on the extent to which a project's presence would alter the perceived visual character and quality of the environment, visual or aesthetic impacts may occur. This analysis of potential visual effects is based on review of a variety of data, including project maps and drawings, visual survey of the Proposed Project site, aerial and ground level photographs of the Proposed Project site, and planning documents (County of Sonoma 2019a). The study area for aesthetic resources encompasses the landscapes directly affected by the Proposed Project and the immediate surrounding areas from which the Proposed Project would be visible.

The Proposed Project would reestablish the Laguna channel to its historical alignment and restore wetland habitats. The Proposed Project site location is relatively flat, ranging in elevation from approximately 51 to 63 feet above mean sea level within viewsheds that include agricultural lands (primarily vineyard), farmed wetlands of the project site, rural residences, and

woodlands. Scenic resources in or near the Proposed Project site include the Laguna and adjacent vineyards and undeveloped lands that are most visible from Guerneville Road Bridge, which crosses the Laguna south of the Proposed Project site.

The Sonoma County General Plan 2020 (County of Sonoma 2020a) defines scenic resources under three open space categories: Community Separators, Scenic Landscape Units, and Scenic Highway Corridors. Community Separators are areas of rural open space, agricultural lands, and various resource lands that are often scenic and serve to separate identifiable cities and other communities. Community Separators may experience development pressure but provide a visual relief from continuous development in the landscape. Scenic Landscape Units preserve scenic resources that are important to quality of life for County residents, tourists, and the agricultural economy. They provide visual relief from dense urban development and have little capacity to absorb much development without significant visual impact. Scenic Corridors are rural roads from which the community, as well as tourists, can view the variety and beauty of the many landscapes of Sonoma County including orchards, forested hills, rolling dairy lands, riparian forest, and scenic valleys planted with vineyards (Sonoma County Permit Resources Management Department 2008).

The Proposed Project is located within a Scenic Landscape Unit, and Guerneville Road located adjacent on the south side of the Proposed Project, is a designated Scenic Corridor according to the Sonoma County General Plan (County of Sonoma 2019a). No state scenic highways are designated in the Proposed Project site. The closest designated state scenic highway is Highway 116 from State Route 1 to Sebastopol, approximately 1.8 miles west of the Proposed Project site. There are no views of the Proposed Project site from Highway 116.

The County of Sonoma has developed Visual Assessment Guidelines (County of Sonoma 2019a) to assess the impacts of individual projects in both unincorporated and incorporated locations. These guidelines provide for rating site sensitivity and the visual dominance of the site, and then using a combination of these ratings to assess the potential for significant impacts. Under this methodology, the sensitivity of a site located within Scenic Landscape Units, Scenic Corridors, and Community Separators would be rated “high”; the sensitivity of a site located in unincorporated lands without a scenic resource designation would generally be considered “moderate”; and the sensitivity of a site located in developed areas would be considered “low.”

The Visual Assessment Guidelines also define a methodology for determining visual dominance of a project. In general, project elements that are not visible from the public view are considered “inevident” and project elements that are minimally visible from public view, or can be seen but do not attract attention, would be considered “subordinate.”

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Aesthetic Resources if it would:

a. Have a substantial adverse effect on a scenic vista?- Less than Significant.

Scenic vistas are generally designated as areas that have scenic or community values or high levels of viewer sensitivity. The Sonoma County General Plan shows the project area within a Scenic Landscape Unit and is adjacent to Guerneville Road which is designated a Scenic Corridor (County of Sonoma 2019a). The Proposed Project area is primarily visible by vehicles while crossing Guerneville Road Bridge. Visual changes to the site would be restorative in nature, and the enhanced habitats would be beneficial to the original character of the site and complement the existing riparian vegetation along the Laguna. The Proposed Project would not have substantial adverse effects on a scenic vista and the impact would be less than significant. See Section 3.1c, below.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?- No Impact.

The nearest state scenic highway is Highway 116, approximately 1.8 miles to the west of the Proposed Project site. The Proposed Project location is not visible from any state scenic highway and there would be no impact.

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?- Less than Significant.

Sonoma Water staff used the County of Sonoma's Visual Assessment Guidelines, which were developed to assess the impacts of individual projects, to evaluate the Proposed Project's potential for impacts to aesthetic resources. These guidelines provide for rating site sensitivity and the visual dominance of the project site, and then using a combination of these ratings to assess the potential for significant impacts (SCPRMD 2019a). Under this methodology, the sensitivity of the Proposed Project site would be considered "high" due to its location within a Scenic Landscape Unit and adjacent to Guerneville Road, a designated Scenic Corridor. Also, the visual dominance of a Proposed Project would be considered "subordinate."

The Proposed Project site is primarily visible to the public travelling on Guerneville Road Bridge over the Laguna. The visual changes to the site, consisting of wetland and riparian habitat restoration, would be consistent with the existing character of the site and the Laguna corridor visible from the Guerneville Road Bridge, and would not substantially degrade the existing visual character or quality of the public views of the site and its surroundings and in the long

term benefit the visual character of the Laguna. Therefore, the impact would be less than significant.

d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?- No Impact.

The Proposed Project construction and maintenance activities would be conducted during daylight hours only, thus no nighttime lighting would be needed. The Proposed Project would not involve construction of new facilities or modifications to existing facilities that would result in new reflective surfaces (sources of glare) or installation of lighting. Therefore, there would be no impact.

3.2 Agriculture and Forestry Resources

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

Agriculture and Forestry Resources Setting

The analysis of potential agricultural resource and forestry impacts is based on review of the following resources: California Important Farmland Maps produced by the California Department of Conservation's (CDC's) Farmland Mapping and Monitoring Program (CDC 2021); Land Conservation Act Map: Sonoma County Williamson Act Map produced by the California Department of Conservation (County of Sonoma 2021a); and the Sonoma County 2020 General Plan Land Use Map (County of Sonoma 2021b).

The CDC Important Farmland classifications define land suitability for agricultural production based on physical and chemical characteristics of the soil, such as soil temperature range,

depth of the groundwater table, flooding potential, rock fragment content, and rooting depth. The classifications also consider location, growing season, and moisture available to sustain high-yield crops. There are eight categories mapped by the CDC under the Farmland Mapping and Monitoring Program (FMMP) described below (CDC 2021):

- **Prime Farmland:** Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields.
- **Farmland of Statewide Importance:** Land similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture.
- **Unique Farmland:** Land of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards in some climatic zones in California.
- **Farmland of Local Importance:** Land that is of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land:** Land with existing vegetation that is suitable for livestock grazing.
- **Urban and Built-up Lands:** Land that is used for residential, industrial, commercial, institutional, and public utility structures and for other developed purposes, and which is occupied by structures with a building density of at least one unit to 1.5 acres (or approximately six structures to a 10-acre parcel).
- **Land Committed to Nonagricultural Use:** Existing farmland, grazing land, and vacant areas that have a permanent commitment for development.
- **Other Land:** Land that does not meet the criteria of any of the previously described categories and generally includes low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines and borrow pits; water bodies smaller than 40 acres; and vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres.

The entire 119.43-acre Proposed Project site is mapped as farmland by the Farmland Mapping and Monitoring Program (CDC 2021). However, only 115.60 acres are actually farmed, which includes areas such as access roads and drainage ditches, and the remaining 3.83 acres consist of aquatic habitat along the Laguna. According to the designations described above, the Proposed Project site includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland designations (Table 3.2-1).

The Sonoma County General Plan land use designation for the Proposed Project site is Land Intensive Agriculture. The Proposed Project site is not under a Williamson Act contract (County of Sonoma 2021e).

Table 3.2-1. Farmland designations in the Laguna-Mark West Creek Watershed Master Restoration Planning Project – High Priority Project area.

Farmland Designation[1]	Proposed Project (acres)
Prime Farmland	18.13
Farmland of Statewide Importance	100.70
Unique Farmland	0.60
Total	**119.43[2]**

[1]Designations based on California Department of Conservation (2021), which incorporates the Laguna and small tributaries into farmland types.
[2]Actual total farmland is 115.60 acres once 3.83 acres of aquatic habitat along the Laguna is excluded from the designation of 100.70 acres of Farmland of Statewide Importance.

The Proposed Project site is part of a larger parcel that supports several agricultural activities. The Proposed Project Site has been farmed since at least the 1950s and is currently used to grow corn for silage and is considered a low value field compared to others currently in viticulture. The comparatively lower value is due to frequent (typically annual) and prolonged (weeks to months) inundation by Laguna floodwaters and backwater from the Russian River that overtop the banks of the Laguna and inundates the Proposed Project site (Figure 2-4).

The Proposed Project site features include drainage ditches, agricultural fields, dirt roads, and the existing Laguna channel and riparian area. Drainage ditches (small tributaries to the Laguna) have been cut into the field to route flows into the channel at the middle to downstream portion of the site as flood waters recede. Before planting operations begin each year, debris deposited on the field from out-of-bank flows is collected for disposal. Corn is typically planted in April and harvested by September and the field lays fallow for the remainder of the year. The current depth of the Laguna channel ranges between 1 and 3 feet. The Proposed Project's land manager noted that the depth of flow in the channel was closer to 10 feet deep more than a decade ago, confirming that deposition over time has filled the channel and reduced conveyance (Soria, C. pers. comm., 2020). Even though there are designated farmlands onsite, farming activities are in reality restricted by frequent flooding and saturated soils, which do not support these farmland designations.

In addition, the Proposed Project site is not designated as forestland or timberland.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Agricultural and Forestry Resources if it would:

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?- Less than Significant.

The Proposed Project site includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland designations (Table 3.2-1). The Proposed Project would restore wetland habitat on 115.60 acres of farmland used currently for silage (Table 2.4-1). Restored wet

meadow habitat (25.03 acres) across the project site would continue to support agricultural uses, in particular grazing, which would maintain compatible agriculture use. The remaining project area of 90.57 acres is not likely to support agricultural use. Although most of the project area is designated as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland, these designations are not supported by the actual historical and current onsite conditions that consist of restricted farming practices due to frequent flooding, prolonged inundation, and saturated soils. In addition, agricultural activities, primarily grazing, would continue to be supported on the project site. For these reasons, conversion through habitat restoration of designated Prime Farmland, Farmland of Statewide Importance, and Unique Farmland would be a less-than-significant impact.

b. Conflict with existing zoning for agricultural use or a Williamson Act contract?- No Impact.

The Sonoma County General Plan 2020 Zoning and Land Use Designation for the Proposed Project site is Land Intensive Agriculture and there is no existing Williamson Act contract (County of Sonoma 2021e). The Proposed Project would be change the land use designation of the Proposed Project site. Therefore, project would not conflict with existing zoning for agricultural use or a Williamson Act contract and there would be no impact.

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?- No Impact.

The Proposed Project site is not designated as forest land or timberland in the Sonoma County General Plan or in Sonoma County's zoning designations (County of Sonoma 2020a). The Proposed Project would not conflict with or cause rezoning of forest lands or timberlands and there would be no impact.

d. Result in the loss of forest land or conversion of forest land to non-forest use?- No Impact.

The Proposed Project site is not designated as forest land. The Proposed Project would not result in the loss of forest land or conversion of forest land to non-forest use and there would be no impact .

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?- Less than Significant.

The Proposed Project would restore wetland habitat to flood-prone farmland, while maintaining compatible agriculture use, as described above in item a. However, this would not result in conversion of farmland in the surrounding areas. The surrounding farmland's ability to be cultivated would not change from the Proposed Project. The Proposed Project would not change the existing effects of flooding on other farmlands along the Laguna. The Proposed

Project would not result in a change in the existing environment that could result in a conversion of Farmland to non-agriculture use and therefore, this would be a less than significant impact.

3.3 Air Quality

When 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:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Air Quality Setting

The air quality setting is provided along with relevant regulatory information and guidelines, and their applicability to the Proposed Project.

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, which affects air quality.

Air Basin

The Proposed Project is located within the boundaries of the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB encompasses the nine-county region, which includes Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin, and Napa counties, and the southern portions of Solano and Sonoma counties. The SFBAAB is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD).

The complex topography of the SFBAAB, including mountain ranges, valleys, and bays, distorts typical wind flow patterns, which are northwest coastal winds. The climate of the region is a

Mediterranean-type climate characterized by warm, dry summers, and mild, wet winters. A high-pressure system is usually present over the eastern Pacific Ocean off the California Coast and plays an important role in determining the region's climate. During winter, the Pacific high-pressure system shifts southward, allowing more storms to pass through the region reducing air pollution. During summer and early fall, when few storms pass through the region, emissions generated within the region may combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants, such as ozone, and secondary particulates, such as nitrates and sulfates (BAAQMD 2017a).

Sensitive Receptors

For the purposes of air quality and public health and safety, sensitive receptors are generally defined as people that would be particularly susceptible to disturbance from dust and air pollutant concentrations, or other disruptions associated with activities associated with the construction of the Proposed Project and maintenance activities. Sensitive receptors generally include children, the elderly, asthmatics, and the infirmed at schools, day care centers, libraries, hospitals, residential care centers, parks, and churches and others who are more susceptible to respiratory distress and other air quality-related health problems than the general public (California Air Resources Board 2021). Some sensitive receptors are considered to be more sensitive than others due to pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

Residences, churches, parks and schools located near to the Proposed Project would be considered sensitive receptors. The nearest residences are approximately 250 feet north of the Proposed Project Site along Piner Road, 400 feet west along Timberhill Road, and 1,500 feet east of the Proposed Project Site along Guerneville Road. Prevailing winds are from the northwest; only the sensitive receptors along Guerneville Road would be downwind of the Proposed Project. The nearest school is Summerfield Waldorf School, located 1.5 miles from the Proposed Project site.

Sensitive Air District Rules, Regulations, and CEQA Guidelines

The BAAQMD was established in 1955 and is the regional agency responsible for rulemaking, permitting and enforcement activities affecting stationary sources in the San Francisco Bay Area. Specific rules and regulations adopted by BAAQMD limit the emissions that can be generated by various stationary sources and identify specific pollution reduction measures that must be implemented in association with various activities. These rules regulate not only emissions of the six criteria air pollutants (ground-level ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead) but also Toxic Air Contaminants (TAC) emission sources, which are subject to these rules are regulated through the BAAQMD's permitting processes and standards of operation. Through this permitting process, stationary source emissions are monitored and this information is used in developing air quality plans. The

Proposed Project would not introduce any new stationary emission sources. Both Federal and State ozone plans rely heavily upon stationary source control measures set forth in BAAQMD's rules and regulations (BAAQMD 2017c). There are 40 stationary source control measures outlined in the 2017 Clean Air Plan.

With respect to construction and maintenance activities associated with the Proposed Project, applicable BAAQMD regulations relate to portable equipment (e.g., gasoline- or diesel-powered engines used for power generation, pumps, and compressors). Equipment used during construction activities may be subject to the requirements of BAAQMD Regulation 2 (Permits), Rule 1 (General Requirements) with respect to portable equipment unless exemptions apply.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Agricultural and Forestry Resources if it would:

a. Conflict with or obstruct implementation of the applicable air quality plan? - Less than Significant.

The BAAQMD Bay Area 2017 Clean Air Plan (2017 CAP) is the most recently adopted regional air quality plan that pertains to the Proposed Project. The BAAQMD *CEQA Air Quality Guidelines* revision identifies a three-step methodology for determining a project's consistency with the current clean air plan (BAAQMD 2017a). BAAQMD considers a project consistent with air quality plans based on the three criteria below.

1. "Does the project support the goals of the air quality plan?"

The BAAQMD-recommended measures for determining project support for these goals is consistency with the BAAQMD Thresholds of Significance. Table 3.3-1 presents the BAAQMD Thresholds of Significance for construction-related air quality impacts (BAAQMD 2017a) and Proposed Project estimates based on emissions calculations in Appendix D. Construction of the Proposed Project would generate air pollutant and precursor emissions from equipment use. However, the emissions would be temporary during construction and be far below levels considered significant by BAAQMD (Table 3.3-1), and therefore fulfil the goals of the 2017 CAP.

Table 3.3-1. BAAQMD Thresholds of Significance for Construction-Related Criteria Air Pollutants and Precursors and Proposed Project Emissions Estimates.

Pollutant/Precursor	BAAQMD Threshold of Significance Daily Average Emissions (lb/day)	Proposed Project Construction Emissions (lb/day)[1]
ROG	54	0.69
NO_X	54	2.22
PM_{10}	82[2]	0.41[2]
$PM_{2.5}$	54[2]	0.17[2]

[1]See Appendix D for calculations.

[2]Applies to construction exhaust emissions only.

Notes: ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable (able to be breathed in) particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less (BAAQMD 2017a).

2. "Does the project include applicable control measures from the clean air plan?"

The 2017 CAP contains 85 individual control measures in nine economic sectors: stationary (industrial) sources; transportation; energy; buildings; agriculture; natural and working lands; waste management; water; and super-greenhouse gas pollutants (Bay Area Air Quality Management District 2017b). The control measures are intended to reduce emissions of ozone precursors, particulate matter, and toxic air contaminants. Many of these control measures require action on the part of BAAQMD, the California Air Resources Board, or local communities, and are not directly related to the actions undertaken for an individual habitat restoration project. The Proposed Project would not prevent the BAAQMD from implementing the control measures in the 2017 CAP and none apply directly to the project.

3. "Does the project disrupt or hinder implementation of any control measures from the clean air plan?"

As described above, the Proposed Project would not prevent the BAAQMD from implementing the 2017 CAP control measures, and none apply directly to the project.

In summary, the Proposed Project would not conflict with or obstruct implementation of the 2017 CAP. As a result, the impact is less than significant.

b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?- Less than Significant with Mitigation Incorporated.

According to California standards, the SFBAAB is currently designated as a nonattainment area for suspended particulate matter (PM_{10} and $PM_{2.5}$) and ozone. Under national standards, the SFBAAB is currently designated as non-attainment for 8-hour ozone, and non-attainment for $PM_{2.5}$. This air basin is in attainment (or unclassified) for all other air pollutants (Bay Area Air Quality Management District 2019).

The non-attainment pollutants of concern for the Proposed Project are ozone, PM_{10} and $PM_{2.5}$. Section 3.3.a, above, examined the Proposed Project according to BAAQMD's significance criteria for construction-related impacts. The examination revealed that the Proposed Project meets all of the threshold criteria (Table 3.3-1) and therefore construction of the Proposed Project would result in a less-than-significant impact from criteria air pollutant and precursor emissions. Following construction, the Proposed Project would not include any stationary sources of air emissions. Equipment use associated with project maintenance would be far less than needed for project construction and would be temporary and intermittent in nature. As such, the Proposed Project would not result in substantial long-term operational emissions of criteria air pollutants. The Proposed Project's contribution to a cumulative non-attainment criteria pollutant impact would be less than significant.

Although mitigation is not required, BAAQMD's recommended Basic Construction Mitigation Measures (BAAQMD 2017a) would be applied during project implementation. These measures protect air quality by avoiding or further minimizing potential adverse impacts to air quality thresholds during construction activities. The following measures will be included in the project contract specifications:

Sonoma Water will require contractors, through project contract specifications, and maintenance staff to implement the following:

1. To reduce dust emissions, 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 as needed, as determined by Sonoma Water, based on conditions.
2. All haul trucks transporting soil or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day or as needed. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. 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.
6. 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.
7. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD phone number shall also be visible to ensure compliance with applicable regulations.

c. Expose sensitive receptors to substantial pollutant concentrations?- Less than Significant.

As discussed in the Air Quality Setting, the nearest sensitive receptors to the Proposed Project site are residences approximately 250 feet away along Piner Road, 400 feet away along Timberhill Road, and 1,500 feet away along Guerneville Road. Prevailing winds during the construction period are from the northwest; only the sensitive receptors along Guerneville Road would be downwind of the Proposed Project.

Construction of the Proposed Project would occur over a period of up to four months. Given the sequenced nature of construction of the Proposed Project, construction activities would continually be shifting to different areas of the Proposed Project site. Additionally, the sensitive receptors along Timberhill Road are separated from the construction activities by dense riparian woodlands. Due to the temporary and variable nature of the construction and maintenance activities, the Proposed Project would not result in the exposure of sensitive receptors to substantial pollutant concentrations. Therefore, the construction-related impact would be less than significant.

Following construction, maintenance of the Proposed Project would not include any stationary sources of air emissions. Vehicle trips and equipment use associated with project maintenance would be far less than needed for project construction and would be temporary and intermittent in nature. Therefore, the exposure of sensitive receptors during project maintenance would be less than significant.

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

The Proposed Project would not create other emissions, such as those leading to objectionable odors, affecting a substantial number of people. Equipment used during Proposed Project construction activities may emit odors associated with combustion of diesel and gasoline fuels. However, these emissions would be temporary and intermittent in nature. The Proposed Project would not result in other emissions that would adversely affect people. The impact would be less than significant, and no mitigation is required.

3.4 Biological Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐

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

Biological Resources Setting

Biological resources on the Proposed Project site are associated with the Laguna waterway, its floodplain, and adjacent agricultural lands. The habitats in the Proposed Project area include: aquatic, mixed riparian forest, and agricultural lands containing disturbed wetlands and grasslands. These habitats are described in "Plant Communities and Habitat Types" below.

Flora and fauna for the Proposed Project site and sensitive species were identified with field surveys and database and literature searches. Field surveys were conducted on June 1, 2020, by Applied Technology & Science (ATS 2020a). The survey area encompassed the Proposed Project site as shown on Figure 2-1. The purpose of the site visit was to evaluate the potential for sensitive biological resources to occur on or near the Proposed Project site.

Sensitive Biological Resources

Sensitive biological resources were defined for the Proposed Project as the following:

1. Any species that has been listed, proposed for listing, or a candidate for listing as threatened or endangered under the Federal Endangered Species (ESA) Act;
2. Any species that has been listed or a candidate for listing as rare, threatened, or endangered under the California Endangered Species Act (CESA);
3. Nesting Birds protected under the Federal Migratory Bird Treaty Act as well as the California Fish and Game Code Sections 3503, 3503.5, and 3513;
4. Any species that has been listed in the Special Plants, Bryophytes, and Lichens List as defined by the California Department of Fish and Wildlife (CDFW), California Natural Diversity Database (CNDDB) (CDFW, 2020a). This includes species of special concern, special-status species, and fully protected species;
5. Any species that has been Assigned a Rare Plant Rank by the California Native Plant Society (CNPS) in the online version of its Inventory of Rare and Endangered Plants of California (CNPS, 2020); and
6. Sensitive natural plant communities include natural vegetation types listed in CDFW's (2020b) Natural Communities List considered to have significant conservation values that have been assigned a rank of S1, S2 or S3 and those protected by the Sonoma County General Plan 2020, which include riparian corridors (SCRPMD, 2020).

A review of special status species with potential to occur in the project area was conducted. A list of federally endangered and threatened species that may occur in the project area was obtained from the U.S. Fish and Wildlife Service (USFWS) website (USFWS 2022). The CNDDB and CNPS electronic inventory were queried. Also, Sonoma Water staff biologists were interviewed. The search results for the Proposed Project are listed in Tables B-1 through B-3 in Appendix B. These tables also include information on each species' habitat requirements, Critical Habitat (if designated), and the likelihood of occurring in the project area. In evaluating the potential occurrence of special status plant and animal species in the project area (No Potential, Low, Moderate, and High), relevant literature, knowledge of regional biota, and observations made during the field investigations were applied as analysis criteria.

Plant Communities and Habitat Types

The Proposed Project site land cover and vegetation consists of an agricultural field, riparian, disturbed grasslands and aquatic habitats. Most of the project area is an agricultural field. Natural vegetation is largely limited to the thin strip of mixed riparian forest along the Laguna channel on the western boundary of the Proposed Project site. A small area at the north end of site has not been recently cultivated and contains ruderal grassland vegetation. Descriptions of these areas are provided below.

Agricultural Field

Most of the Proposed Project site is seasonally inundated by flood waters from the Laguna. The site is usually planted with corn when flood waters recede and harvested at the end of summer. This area is disced or plowed annually. Lower lying areas that may be inundated into summer or later often have patches of *Ludwigia* (water primrose, *Ludwigia hexapetala*), a nonnative and invasive wetland plant species.

Ruderal Grassland

Ruderal grassland is found on the northern edge of the site covering less than one acre. This grassland is characterized by several nonnative annual grasses and forbs, including hare barley (*Hordeum murinum* ssp. *leporinum*), Harding grass (*Phalaris aquatica*), rip-gut brome (*Bromus diandrus*), wild oat (*Avena barbata, A. fatua*), black mustard (*Brassica nigra*), and fennel (*Foeniculum vulgare*). Also, present are patches of Himalayan blackberry. Scattered trees, including a large cottonwood (*Populus fremontii*) as well as arroyo willow (*Salix lasiolepis)*, Oregon ash (*Fraxinus latifolia*), and honey locust (*Gleditsia triacanthos*), are also present in the ruderal grassland area.

Mixed Riparian Forest

Mixed riparian forest occurs along the Laguna channel and the western border of the project area. This area is inundated annually from Laguna flood waters. Common species include arroyo willow*,* sandbar willow (*Salix exigua*), black walnut (*Juglans hindsii*), Oregon ash, box elder (*Acer negundo*), and valley oak (*Quercus lobata*). Common understory species include Himalayan blackberry (*Rubus armeniacus*), curly dock (*Rumex crispus*), poison hemlock (*Conium maculatum*), chicory (*Cichorium intybus*), smooth cocklebur (*Xanthium strumarium*), and prickly lettuce (*Lactuca serriola*).

Agricultural Drainage Ditch

There are two a shallow seasonal drainage ditches (small tributaries) that cross the agricultural field and flow to the Laguna. The ditches appear to be regularly disked or mowed during cultivation activities. During the June 1, 2020 survey (ATS 2020), the ditches contained areas with shallow open water and several ruderal wetland plants including: *Ludwigia*, willow weed (*Persicaria lapathifolia*), curly dock, fat hen (*Atriplex patula*), rabbit's-foot grass (*Polypogon monspeliensis*), Italian ryegrass (*Festuca perennis*), and smooth cocklebur growing along the ditch's upper edges. These wetland plants often occur in degraded or disturbed areas.

Ludwigia is a hardy plant that can survive in a wide range of temperatures, soil types, water depths, moisture conditions including drought, and sunlight levels (Grewell et al., 2016). It grows at the water body margins of higher velocity channels and in the middle of slower moving water bodies. It is mainly propagated by fragmentation and seed dispersal. It develops adventitious roots in the water column and continues growing as it reaches down and around to find soil to root into. Once the roots develop and the rhizomes begin to grow, eliminating *Ludwigia* permanently is difficult. When conditions are favorable again, the rhizomes reactivate and begin producing more biomass (Zardini et al., 2016).

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Biological Resources if it would:

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

There are 59 special-status species identified as potentially occurring in the Proposed Project vicinity (Appendix B Tables B-1, B-2, and B-3). However, 40 plants and 13 animals have no potential or low potential to occur in the project area, primarily due to unsuitable habitat and/or the site is outside the range of the species. Species with moderate to high potential to occur in the project area consist of one plant and four animals, including: Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*), Central California Coast coho salmon (*Oncorhynchus kisutch*), Central California Coast steelhead (*Oncorhynchus mykiss*), northwestern pond turtle (*Actinemys marmorata*), and white-tailed kite (*Elanus leucurus*). In addition, several common bird species likely occur in the project area, which are protected, especially while nesting. These species are discussed in detail below.

Sonoma alopecurus is a federally endangered wetland plant that occurs in a few isolated sites. This plant occurs in freshwater marshes and riparian scrub in the north San Francisco Bay region. The nearest occurrence is at Pitkin Marsh, 1.7 miles west of the Proposed Project site (CNDDB 2022). The wet areas and riparian habitats along the Laguna at the Proposed Project site provide marginal habitat for Sonoma alopecurus. These onsite wetlands have been degraded from ongoing farming and past channelization of the Laguna for flood control.

Focused botanical surveys for Sonoma alopecurus found no plants in the Proposed Project site (ATS 2020a; ATS 2020b). Due to marginal and degraded habitat onsite and the absence of these plants during focused surveys, the Proposed Project would have a less than significant impact on Sonoma alopecurus and no mitigation is needed. Also, the Proposed Project's restoration of wetlands would improve potential habitat conditions for this plant species.

There are two special-status fish species with a moderate potential of occurring in the Proposed Project site (Table B-2). These fish are anadromous salmonids that spawn in headwater creeks and spend their adult life in the ocean, including the state and federal endangered Central California Coast coho salmon (*Oncorhynchus kisutch*) and federally threatened Central California Coast steelhead (*Oncorhynchus mykiss*). These two salmonids migrate upstream along the Russian River during winter to spawning areas with clean gravel substrate in cold, clear headwater tributaries. The nearest spawning creeks to the project area are Mark West Creek for coho and steelhead and Santa Rosa Creek for steelhead (Cook and Manning 2002). These creeks flow into the Laguna above and below the Proposed Project area. However, the low-gradient Laguna with fine substrate material and warm water temperatures during summer exclude these fish from spawning and rearing in the project area. Both salmonids likely migrate along the Laguna during winter when water is cooler and are unlikely to be present during the Proposed Project's construction activities in summer. Also, the Proposed Project's restoration would benefit migrating coho and steelhead by providing improved winter migration and refuge from high velocity flows. Although coho salmon and steelhead are unlikely to be present during the project construction period (June 15 to October 15), Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4 would further minimize potential impacts by conducting pre-construction surveys to determine the presence of coho and steelhead in the project area, worker awareness training on the sensitivity of these fish, and relocation of fish out of the construction area, if present.

The northwestern pond turtle is a Species of Special Concern and inhabits several stream and pond habitat types. There are several reports of this turtle from the Laguna, tributaries, and nearby waterbodies. The Laguna within the project area provides suitable habitat and there is a high potential for this reptile to occur onsite during project construction activities. The Proposed Project could result in temporary impacts to the northwestern pond turtle if individuals are encountered onsite during construction activities, which could be potentially significant. Mitigation Measures BIO-1, BIO-2, and BIO-4 would avoid and minimize potential impacts to northwestern pond turtle by conducting pre-construction surveys to determine the presence of turtles in the project area, worker awareness training on the sensitivity of turtles, and relocation of turtles out of the construction, if present. Also, the Proposed Project's wetland habitat restoration would benefit this species in the long term by increasing aquatic and wetland habitats.

The white-tailed kite (*Elanus leucurus*) is a state Fully Projected bird that is known to occur in the project vicinity. This bird forages in foothill and valley areas with scattered oaks and prefers to nest in dense-topped trees. The kite likely forages in the project vicinity and may nest in trees along the Laguna. The Proposed Project's riparian restoration would likely enhance nesting habitat for the kite and restored wetland habitats would continue to provide potential foraging habitat for this species. However, temporary construction activities that would occur during the

nesting season for white-tailed kite could result in impacts as a result of disturbance of nesting activities if the species is nesting in the project area. Mitigation Measure BIO-5 would minimize potential impacts by protecting active nests, if present.

The Proposed Project would restore hydrologic and ecological function of the Laguna in the project area that would benefit several common and special-status species that utilize aquatic and wetland habitats. However, the Proposed Project may temporarily impact special-status species, if present during construction. Steelhead and coho are unlikely to be present during summer construction, while northwestern pond turtles are residents of the Laguna and white-tailed kite may nest and forage onsite. Possible loss or injury of individuals could occur from ground disturbance during construction and maintenance activities. While the general information above is known, pre-construction surveys are appropriate to identify whether species are actually present at the time of construction.

The Proposed Project may impact the listed steelhead and coho salmon, and require compliance with the federal and state Endangered Species Acts (ESA). Because the project would impact wetlands subject to the authority of the US Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act, the USACE will consult with the National Marine Fisheries Service (NMFS) in compliance with Section 7 of the federal ESA. Through this consultation process NMFS will define mitigation to compensate for unavoidable impacts to salmon and steelhead and issue its findings in a Biological Opinion (BO) for the project. Following the provisions of Section 2080.1 of the California Fish and Game Code (California ESA), the California Department of Fish and Wildlife (CDFW) will review the incidental take statement in the BO and determine if it is consistent with the requirements of the California ESA. If CDFW determines that the federal authorization is not consistent with the California ESA, the project proponent (Sonoma Water) will apply for a State Incidental Take Permit under section 2081(b) of the California Fish and Game Code. Section 7(a)(2) of the Endangered Species Act requires that federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. “Jeopardize the continued existence of” means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. (50 CFR § 402.02). Section 7(a)(2) also requires that federal agencies ensure that any action they authorize, fund, or carry out is not likely to destroy or to adversely modify designated critical habitat. The California Endangered Species Act in turn requires that any take allowed in a take permit be “fully mitigated.” (Cal. Fish & Game Code §2081(b); 14 CCR §783.4.) Thus, the State and Federal permit process will mitigate the impacts to steelhead and coho salmon.

The below mitigation measures would avoid and minimize impacts to sensitive species.

Mitigation Measure BIO-1: Pre-construction Biological Surveys and Avoidance
Sonoma Water shall conduct pre-construction biological resources surveys to identify special-status plants and animals in the Proposed Project area, as follows:

1. Pre-construction surveys shall be conducted by a qualified biologist, no more than one week prior to commencement of construction activities or maintenance that could impact

special-status plant or wildlife species. The biologist shall have familiarity with special-status species of the area and experience with conducting special-status species surveys. A qualified biologist (including those specializing in botany, wildlife, and fisheries) is an individual who shall have a minimum of five years of academic training and professional experience in biological sciences and related resource management activities with a minimum of two years conducting surveys for each species that may be present within the project area. Sonoma Water may also utilize appropriately experienced and/or trained environmental staff. Resumes shall be submitted to California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and/or National Marine Fisheries Service, as appropriate, for approval prior to commencement of biological surveys.

2. If no special-status species are encountered, no further surveys would be needed, unless additional measures are required by regulatory permit conditions obtained for the Proposed Project.
3. Additional pre-construction surveys shall be conducted such that no more than two weeks will have lapsed between the survey and construction or maintenance activities.
4. If a special-status species is encountered, the location will be documented and avoidance and minimization measures will be prepared by the qualified biologist, in coordination with resource agencies. Avoidance and minimization measures shall include, but not be limited to, establishment of a no-work buffer around special-status species, or relocation out of the construction area, see Mitigation Measure BIO-4.

Mitigation Measure BIO-2: Worker Environmental Awareness Training
Sonoma Water shall require contractors, through project contract specifications, and internal staff to participate in the following:

1. Prior to beginning construction activities, all personnel involved in the activities shall participate in an educational training session conducted by a qualified biologist. A qualified biologist (including those specializing in botany, wildlife, and fisheries) is an individual who shall have a minimum of five years of academic training and professional experience in biological sciences and related resource management activities with a minimum of two years conducting surveys for each species that may be present within the Proposed Project site. Resumes will be submitted to California Department of Fish and Wildlife, U.S. Fish and Wildlife Service and/or National Marine Fisheries Service, as appropriate, for approval prior to commencement of biological surveys. This training will include instruction on how to identify bird nests, recognize special status species and sensitive habitats, regulatory protections, and the appropriate protocol if any special species or nests are found during Proposed Project implementation.
2. Personnel who miss the first training session must participate in a make-up session before conducting construction activities.

Mitigation Measure BIO-3: Salmonid Protections

Although steelhead and coho salmon are unlikely to be present in the project area during construction and maintenance, the following measures will further avoid and minimize potential impacts to these fish species.

1. Sonoma Water shall obtain and comply with a Section 404 Clean Water Act permit from the U.S. Army Corps of Engineers. Sonoma Water shall comply with the requirements of the Biological Opinion issued for the Project by NMFS. If CDFW finds that the Biological Opinion does not satisfy CESA requirements, Sonoma Water shall obtain and comply with a State Incidental Take Permit under Section 2081(b) of the California Fish and Game Code.

Mitigation Measure BIO-4: Special-Status Aquatic Species Relocation Out of Construction Areas.

Sonoma Water shall prepare a Special-Status Species Relocation Plan prior to relocating aquatic species out of construction or maintenance areas. The relocation plan at a minimum shall include the following:

1. Qualifications of individuals conducting relocation activities, including documented experience with successful relocations for the relevant species and all required authorizations, a qualified biologist (including those specializing in botany, wildlife, and fisheries) is an individual who shall have a minimum of five years of academic training and professional experience in biological sciences and related resource management activities with a minimum of two years conducting surveys for each species that may be present within the Proposed Project site;
2. life stages (juveniles and adults) of the aquatic species (coho salmon and steelhead, northwestern pond turtle) that would be relocated if they are present, and life stages at which relocation may not be feasible, for example, for eggs and associated avoidance measures;
3. survey methods for identifying special-status species in the project area, which are anticipated to include dipnetting, seining, and electrofishing;
4. capture and relocation methods, including dipnetting, seining, and electrofishing, including following the Restraint and Handling of Live Amphibians Standard Operation Procedures, prepared by USGS, dated February 16, 2001;
5. identification and description of the relocation area;
6. the following criteria will be considered when selecting relocation site(s): proximity to the work area, similar water temperature as capture location, ample habitat availability prior to release of captured aquatic species, and low likelihood of animals reentering work site;
7. description of potential impacts from the proposed electrofishing to non-fish species, and methods for minimizing such impacts;
8. monitoring of water quality and health of relocated animals;
9. method for ensuring relocated animals do not return to the Project area, such as location of block nets or cofferdams, which will be determined in the field based on wetted conditions onsite at the time of project construction; and

10. the Special-Status Species Relocation Plan shall be submitted to California Department of Fish and Wildlife for approval prior to commencement of relocating aquatic species out of construction or maintenance areas.

Breeding birds and their nest and eggs are protected under Sections 3503 and 3503.5 of California Fish and Game Code. Additionally, Section 3513 of the Code, as well as the federal Migratory Bird Treaty Act (16 USC, Sec. 703 Supp. I, 1989), prohibit the "killing, possession, or trading of migratory birds." Lastly, Section 3800 of the Code prohibits the take of non-game birds, defined as birds occurring naturally in California that are neither game birds nor fully protected species.

The Proposed Project includes potential nesting habitat for numerous common bird species. No permanent impacts to birds foraging or migration habitat would occur from the Proposed Project and proposed restoration would enhance habitat conditions for many birds. However, construction activities could result in potentially significant temporary impact to nesting birds from the removal of trees and ground vegetation where birds could nest. Maintenance activities could also impact active nests. These activities would also generate short-term noise that could impact nesting behavior. Disturbance to nesting birds would be avoided by conducting construction and maintenance outside of the nesting season or minimized by conducting pre-construction nesting surveys as described in Mitigation Measure BIO-5 (Nesting Bird Protection Measures).

Mitigation Measure BIO-5: Nesting Bird Protection Measures

1. If construction or maintenance activities must be scheduled during the nesting season (February 15 through August 15 for most birds), a qualified biologist, familiar with the species and habitats in the area, shall conduct pre-construction surveys for raptors within suitable habitat within 500 feet of construction and maintenance activities and passerine nesting birds within 50 feet of construction and maintenance activities. The surveys shall be conducted no more than one week before initiation of construction or maintenance activities. If no active nests are detected during surveys, activities may proceed. Vegetation removal activities will be conducted under the guidance of a qualified biologist or designated trained monitor. A qualified biologist (including those specializing in botany, wildlife, and fisheries) is determined by a combination of academic training and professional experience in biological sciences and related resource management activities. Sonoma Water may also utilize appropriately experienced and/or trained environmental staff. Resumes will be submitted to California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service and/or National Marine Fisheries Service, as appropriate, for approval prior to commencement of biological surveys.
2. If active nests are identified in the project area, non-disturbance buffers shall be established at a distance of 500 feet for raptors and 50 feet for all other bird species. Buffer distance may be adjusted with CDFW approval if the adjustment will not disturb birds. If active nests are found within 500 feet of a work area, a qualified biologist shall be on site as necessary to monitor the nests for signs of nest disturbance. If it is determined that construction or maintenance activity is resulting in nest disturbance, work shall cease immediately and CDFW shall be contacted. Buffers will remain in place until a qualified

biologist determines that the young have successfully fledged, or nests have been otherwise abandoned.

Overall, several biological mitigation measures would be implemented to further avoid and minimize potential impacts to special-status species, including plants, fish and wildlife. Pre-construction biological surveys would identify and avoid special-status species in the Proposed Project area (Mitigation Measure BIO-1). Worker awareness training would be implemented (Mitigation Measure BIO-2) to ensure that all construction and maintenance personnel are aware of the special-status species, their habitats, and the measures to be implemented to avoid or minimize impacts. Mitigation Measure BIO-3 would minimize impacts to steelhead and coho by complying with the state and federal Endangered Species Acts and would minimize the potential take of these fish. To avoid and minimize impacts to special-status aquatic species, Mitigation Measure BIO-4 would relocate these species out of the project work area prior to construction and maintenance activities. In addition, common aquatic species would be relocated out of the work area. Mitigation Measure BIO-5 would minimize potential impacts to nesting birds. Implementation of Mitigation Measures BIO-1 through BIO-5 would reduce potential impacts to steelhead, coho, northwestern pond turtle, and nesting birds to a less-than-significant level. In addition, the Proposed Project's restoration of wetland habitats will likely benefit several special-status and common plant and animal species.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? – No Impact.

The Proposed Project would not have a substantial adverse effect on any riparian habitat or sensitive natural communities identified in relevant plans. There are no sensitive natural communities, as defined by CDFW or USFWS, present onsite (ATS, 2020a). However, other designated and sensitive natural communities are present, including western North American freshwater marsh macrogroup, southwestern North American riparian evergreen and deciduous, and Vancouverian riparian deciduous forest group (Sonoma County Vegetation Mapping & LIDAR Program, 2017).

Portions of the Laguna de Santa Rosa has been designated as a Wetland of International Importance by Ramsar (Ramsar 2022), which promotes the conservation and wise use of wetlands. The Proposed Project is outside the Ramsar designation. However, the Proposed Project's restoration activities of marsh and riparian habitats would be consistent with Ramsar's conservation objective.

The Santa Rosa Plain Conservation Strategy Plan (Strategy Plan) is a conservation program for the recovery of several ESA-listed vernal pool-dependent species, including the California tiger salamander and four wetland plants. The Laguna is the western boundary of the Strategy Plan's Study Area. The Strategy Plan designates several conservation areas that contain vernal pools and surrounding grassland and oak savannah habitats that are above the 100-year floodplain. Sites considered unacceptable for preservation in the Study Area are those within the 100-year

floodplain and/or contain fish, which includes the Proposed Project. As such, the Proposed Project would not affect habitats important for conservation under the Strategy Plan.

Portions of the Proposed Project are within the oversight of the Sonoma County General Plan 2020 (SCPRMD, 2016). This plan requires the protection of several natural communities. Relevant goals and objectives include:

Sonoma County General Plan 2020

- Objective OSRC-7.1: Identify and protect native vegetation and wildlife, particularly occurrences of special-status species, wetlands, sensitive natural communities, woodlands, and areas of essential habitat connectivity.
- GOAL OSRC-8: Protect and enhance Riparian Corridors and functions along streams, balancing the need for agricultural production, urban development, timber and mining operations, and other land uses with the preservation of riparian vegetation, protection of water resources, flood control, bank stabilization, and other riparian functions and values.

The Proposed Project's purpose is to restore the Laguna and wetland habitats within the Proposed Project site. The design of the Proposed Project is intended to create a new hydrologic regime that would restore the area to freshwater marsh, wet meadow, and mixed riparian forest (SFEI, 2020). The Proposed Project would have temporary impacts to riparian and wetland habitats during construction and maintenance activities. However, the Proposed Project would restore most of the site to its historic natural conditions and provide a net benefit to habitats along the Laguna.

In summary, the Proposed Project would not adversely affect any plans or policies that regulate sensitive natural communities. The project area is outside of a Ramsar designated wetland and Strategy Plan designated Conservation Area. Also, the proposed restoration would be consistent with the County of Sonoma General Plan 2020 goals and objectives related to riparian habitat and natural communities. Overall, the Proposed Project would have a net benefit to riparian and wetland habitats.

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

There are state and federally protected wetlands and aquatic features along the Laguna and in the Proposed Project area. A wetland evaluation estimated that the entire project area of 119.43 acres consists of jurisdictional wetlands and water features (Table 3.4-1). These wetlands and waters are protected by the federal Clean Water Act and California Fish and Game Code. The Proposed Project would restore and enhance all of the wetlands and aquatic features onsite. Most of the enhancement would be from the restoration of farmed wetlands to natural wetland and aquatic habitats and would result in no net loss of wetlands. However, most wetlands, mainly farmed wetland, would be temporarily impacted during construction and maintenance

consisting of 115.6 acre of jurisdictional wetlands. Overall, the Proposed Project's restoration would improve the ecological function of the Laguna, floodplain, and wetland habitats. The Proposed Project's permanent enhancement of wetland habitat is expected to compensate for the temporary disturbance of primarily degraded farmed wetlands.

Table 3.4-1. Jurisdictional Wetlands and Waters, the Laguna-Mark West Creek Watershed Master Restoration Planning Project – High Priority Project area.

Existing Land Type	Existing Wetland Resource	Proposed Restoration Habitat Type			
		Freshwater Marsh	Wet Meadow	Riparian/Mixed Riparian Forest	Aquatic Channel
Jurisdictional Wetlands (acres)					
Farmed Wetland	114.85	44.02	24.96	28.38	17.49
Two Small Seasonal Tributaries	0.75	0.62	0.07	0.05	0.01
Subtotal	**115.60[a]**	**44.64**	**25.03**	**28.43**	**17.50**
Jurisdictional Waters (acres)					
Riverine	3.83	-	-	-	3.83
Total	**119.43**	**44.64**	**25.03**	**28.43**	**21.33**

[a]Existing farmed lands include farmed wetlands (114.85 acres) used for silage and two small seasonal tributaries (0.75 acre) that are disked during farming activities.

However, **Mitigation Measure BIO-6: Protect jurisdictional waters and wetlands** would ensure that impacts to jurisdictional wetlands and waters of the US during construction and maintenance activities are less than significant.

Mitigation Measure BIO-6: Protect Jurisdictional Waters and Wetlands
Construction activities resulting in the introduction of fill or other disturbance to jurisdictional wetlands and other protected waters may require a permit from the US Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA), a Water Quality Certification from North Coast Regional Water Quality Control Board (NCRWQCB) pursuant to Section 401 of the CWA, and California Department of Fish and Wildlife (CDFW) has jurisdiction over streams and may require a Streambed Alteration Agreement (SAA) under Section 1602 of the California Fish and Game Code. Sonoma Water shall apply for permits from the appropriate regulatory agencies and comply with terms.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? – Less than Significant.

The Proposed Project would restore the Laguna's historic channel and riparian corridor in the project area that would benefit the migration and movement by fish and wildlife. However, temporary impacts could occur if construction and maintenance activities are conducted during periods important for migration to fish and wildlife. Construction and maintenance activities for

the Proposed Project would be conducted during the summer dry season (June 15 to October 15) when surface waters are confined to the Laguna channel and flows are at their lowest. This summer work schedule would avoid the winter and spring seasons when fish migrations occur, including adult steelhead and coho salmon. Although there may be temporary and partial changes in flow patterns during summer construction, this interruption of fish passage would have a negligible effect. Wildlife use of the riparian corridor along the Laguna would be minimally affected as access to the riparian forest in the project area would be maintained during construction and maintenance activities. The temporary effects of fish and wildlife movement from the Proposed Project would have less-than-significant and no mitigation is required. In addition, the Proposed Project's restoration of the Laguna channel and wetland habitat will enhance the migration corridor and provide long-term benefits to fish and wildlife.

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? – Less than Significant.

Ordinance 6089 of the Sonoma County zoning code protects riparian corridors and functions along designated streams. Development setbacks of 50-200 feet are designated along most creeks and rivers outside of city boundaries. Prohibited activities within setbacks include grading, vegetation removal, agricultural cultivation, structures, roads, utility lines, and parking lots. Allowable land use and activities are described in Section 26-65-040 of the ordinance including "stream maintenance and restoration carried out or overseen by the Sonoma Water." The Proposed Project would restore aquatic and wetland habitats and would comply with all zoning codes protecting riparian and stream corridors.

Article 67, Valley Oak Habitat Combining District, of the Sonoma County zoning code protects and enhances valley oaks and valley oak woodlands. This ordinance requires mitigation for the removal of large, 60-inch diameter, valley oak trees. However, exceptions include trees "dead or irretrievably damaged or destroyed by causes beyond the property owner's control, including, without limitation, fire, flood, wind, lightning, or earth movement" (Section 26-67-030, item b). The Proposed Project would remove three valley oaks less than 16 inches diameter during restoration activities. No large valley oaks would be impacted that would require mitigation under Article 67.

Overall, the Proposed Project would not conflict with any local policies or ordinances protecting biological resources and no mitigation is required.

f. Conflict with the provisions of an adopted Habitat Conservation Plan , Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? – No Impact.

There are no Natural Community Conservation Plans (NCCP) or Habitat Conservation Plans (HCP) that include the Proposed Project site (CDFW, 2022; USFWS, 2022). The Proposed Project is within the Study Area of the Santa Rosa Plain Conservation Strategy Plan (Strategy Plan). However, the Strategy Plan excludes areas within the 100-year floodplain of the Laguna, including the project area. Please Section 3.3 item b for more details. The Proposed Project would not conflict with the of the Strategy Plan or other plans and there would be no impact.

3.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Cultural Resource Setting

The cultural resources setting is provided along with relevant regulatory background, summary of surveys conducted, and their applicability to the Proposed Project. Cultural resources discussed in this section include archaeological resources, including historical resources or unique archaeological resources.

Regional Cultural History

Prehistoric Setting

Archaeological evidence indicates that human occupation of California began at least 11,000 years ago. Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), that are possible indicators of both status and increasingly complex exchange systems (Origer and Alshuth, 2021).

Prehistoric archaeological site indicators expected to be found in the region include but are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and hand-stones, and mortars and pestles; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire affected stones.

Ethnographic Setting

At the time of European settlement, the project area was included in the territory of the Southern Pomo. The Pomo were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures. They settled in large, permanent villages that were distributed about seasonal camps and task-specific sites. Primary village sites were occupied continually throughout the year and other sites were visited in order to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near sources of fresh water and in ecotones where plant life and animal life were diverse and abundant.

The Southern Pomo population was decimated early in the historic period, especially in the southern part of their territory. Ethnic identity was severely impacted in the region of Santa Rosa and Sebastopol. By 1976, the few remaining Southern Pomo speakers were from north of Healdsburg (Origer and Alshuth 2021).

Historic Setting

Historically, the project study area is within the Molino Rancho (also known as the Rancho El Molino), granted to John B. R. Cooper in 1836. When granted, it consisted of 17,892 acres that extended south from the Russian River along Atascadero Creek, and encompasses present-day Forestville (Origer and Alshuth 2021). “Molino” means mill in Spanish. The grant itself is named after Cooper’s Sawmill, which was built in 1834. It is believed to be the first power-operated commercial sawmill in California. The mill was destroyed in a flood during the winter of 1840-41.

Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps) (Origer and Alshuth 2021).

Results of Research and Surveys

Tom Origer and Associates conducted an archival records search and site visits for the Proposed Project area (Origer and Alshuth 2021). This research was meant to assess the potential to encounter archaeological sites and built environment within the study area. Research was also completed to determine the potential for buried archaeological deposits. A review (NWIC File No. 20-2429) was completed of the archaeological site base maps and records, survey reports, and other materials on file at the Northwest Information Center (NWIC), Sonoma State University, Rohnert Park on May 27, 2021. Sources of information included but were not limited to the current listings of properties on the National Register of Historic Places, California Historical Landmarks, California Register of Historical Resources, and California Points of Historical Interest as listed in the Office of Historic Preservation’s (OHP) Historic Property Directory (2012). Other literature and archival research were conducted to supplement the NWIC report including examination of the library and project files at Tom Origer & Associates.

Archival research found that the study area had been included in a previous cultural resources study (Bouey 1984). No cultural resources were identified during that study. Eight studies have been conducted within a quarter-mile of the study area that found one recorded resource within

a quarter mile of the study area (Bramlette et al. 1980). This resource does not have the potential to extend into the current study area.

There are three reported ethnographic sites within one mile of the study area (Barrett 1908; Kroeber 1925). Origer and Alshuth (2021) concluded that there is a high potential for buried archaeological resources within the Proposed Project area.

An intensive field survey was completed by a four-person crew on July 8, 2021. In addition to the field crew from Tom Origer & Associates, a Tribal Monitor representing the Federated Indians of Graton Rancheria was present for the field survey. Approximately twenty-four person hours were spent in the field and field conditions were sunny and clear. Surface examination consisted of walking in 15-meter transects. Ground visibility ranged from good to poor, with vegetation, such as grasses and forbs being the primary hindrances. Hoes were used as needed to clear patches of vegetation to expose the ground surface. No archaeological site was found, and the boundaries of the Proposed Project area have been modified to avoid potential resources.

A desktop geoarchaeological desktop study and testing plan was prepared for the project area (GEI Consultants 2022). Surface geology in the study area ranges in age from Historical (i.e., within the last 150 years or so) to Early-Late Pleistocene. Overall, these sediments are less than about 500,000 years old, but may be as much as 2.6 million years old. Current geologic mapping at a scale of 1:24,000 classifies sediments within the study area as artificial dam fill (adf), artificial fill (af), alluvial deposits, undivided (Qhay), and older alluvium (Qoa). Except for the artificial materials, geologic units in the study area are alluvial (i.e., river or stream) in origin (GEI Consultants 2022). The three soils series in the study area, Clear Lake, Huichica, and Pajaro, are bimodally distributed in age; they are either Latest Holocene (which includes post-contact times) or Middle to Late Pleistocene. All three soils series are associated with (i.e., developed on top of) the geologic units described above. Age estimates are improved by ongoing radiocarbon studies, with many new dates generated over the last two decades. Recent and ongoing research in a variety of settings throughout central California demonstrates the relationship between Late/Latest Pleistocene and Late/Latest Holocene alluvial landforms, buried soils, and buried archaeological components. As such, because all soils within the study area are associated with Latest Holocene or Late Pleistocene landforms, they all have high archaeological sensitivity (GEI Consultants 2022).

Geologic and soils mapping data indicate that soils within the study area are associated with both Latest Holocene (Qhay) and Early to Late Pleistocene (Qoa) landforms (GEI Consultants 2022). These bimodally distributed landforms are considered to have high archaeological sensitivities. Late Pleistocene sediments have high surface sensitivities, while Latest Holocene areas have high buried sensitivities.

In addition, historical maps and aerial photographs indicate the study area, and surrounding land, is characterized by a relatively low-relief floodplain with predominantly fluvial basin topography, constrained by valley and hill geography on either side (i.e., east and west). The Laguna de Santa Rosa is well-known as a perennially inundated flood basin, and this major hydrologic feature would have occurred in the past. Because of this, locations immediately

within the Laguna de Santa Rosa flood area would have been unlikely for long-term habitation, either historically or earlier.

Pre-contact settlements are known to have occurred within one mile of the study area (see Barrett 1908 and Alshuth and Origer 2021), but these were on the opposite side (west side) of the Laguna de Santa Rosa; no such settlement is known to have occurred in the study area. However, short-term processing locations or occasional pass-through activities (e.g., walking or boating) may have occurred (GEI Consultants 2022).

The desktop geoarchaeological desktop study and testing plan (GEI Consultants 2022) reviewed historical BLM GLO survey plats, topographic maps, and aerial photographs, which all show the project areas as having relatively low relief (i.e., elevations of approximately 0 to 20 feet above mean sea level and with minimal elevational variability). This makes sense since the study area lies within historical floodplain areas of the Laguna de Santa Rosa. In addition, early maps show landscape features (e.g., small creeks and “bottom lands”) associated with overflow and drainage of the Laguna de Santa Rosa. The study area has been used over the years for agriculture, but no structures (e.g., houses, barns, out-buildings) were ever built. This likely has to do with the fact that the land has always been prone to seasonal flooding and its soils are relatively water-logged (i.e., poorly drained).

As described in the geoarchaeological testing plan, during November 2022, a geoarchaeological field study was conducted in the Proposed Project site consisting of 30 trench sites up to eight feet deep (GEI Consultants 2022). Excavated soil was sifted for artifacts. A Tribal Monitor representing the Federated Indians of Graton Rancheria was present for the field survey. No potential resources that constitute archaeological sites were found. Potential resources are identified in confidential archaeological reports.

Native American Outreach

On May 24, 2021, a request was sent to the State of California’s Native American Heritage Commission (NAHC) seeking information from the Sacred Lands File and the names of Native American individuals and groups that would be appropriate to contact regarding this project. Letters were also sent to the following groups: Cloverdale Rancheria of Pomo Indians of California, Dry Creek Rancheria of Pomo Indians, Federated Indians of Graton Rancheria, Guidiville Indian Rancheria, Kashia Band of Pomo Indians of the Stewarts Point Rancheria, Lytton Rancheria of California, Middletown Rancheria of Pomo Indians of California, Mishewal-Wappo Tribe of Alexander Valley, and Pinoleville Pomo Nation.

The NAHC responded on June 8, 2021. Information was provided to Sonoma Water.

The Tribal Historic Preservation Office representing the Kashia Band of Pomo Indians of the Stewarts Point Rancheria, responded on June 14, 2021. He stated that the proposed project is outside of the Tribe’s aboriginal territory and that the tribe has no concerns or comments at this time.

Sonoma Water received a formal request from Graton Rancheria on April 14, 2021, for tribal consultation. Sonoma Water has been in consultation with the Federated Indians of Graton

Rancheria. In addition, tribal monitors have been present for archaeological pedestrian and geoarchaeological field surveys.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Cultural Resources if it would:

a. Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5? – Less than Significant with Mitigation Incorporated.

The desktop geoarchaeological desktop study and testing plan (GEI Consultants 2022) reviewed historical BLM GLO survey plats, topographic maps, and aerial photographs, which all show the project areas as having relatively low relief (i.e., elevations of approximately 0 to 20 feet above mean sea level and with minimal elevational variability). The study area lies within historical floodplain areas of the Laguna de Santa Rosa. In addition, early maps show landscape features (e.g., small creeks and “bottom lands”) associated with overflow and drainage of the Laguna de Santa Rosa. The project area has been used over the years for agriculture, but no structures (e.g., houses, barns, out-buildings) were ever built. This likely has to do with the fact that the land has always been prone to seasonal flooding and its soils are relatively water-logged (i.e., poorly drained) (GEI Consultants 2022a).

Potential resources that constitute an archaeological site or historic resource were not found during surveys. Geologic and soils mapping data indicate that soils within the study area are associated with both Latest Holocene (Qhay) and Early to Late Pleistocene (Qoa) landforms (GEI Consultants 2022). These bimodally distributed landforms are considered to have high archaeological sensitivities. Late Pleistocene sediments have high surface sensitivities, while Latest Holocene areas have high buried sensitivities. As such there is the potential to uncover previously unidentified historical or archaeological resources during ground disturbance, particularly during excavation of the proposed channel and tributaries. The disturbance, or damage, of a previously unidentified historical or archaeological resource would be a potentially significant impact.

Implementation of **Mitigation Measure CUL-1** would reduce potential impacts to less than significant by ensuring that construction work would halt within 50 feet of an unanticipated find so that a qualified archaeologist and a culturally-affiliated Native American representative could make additional recommendations if required. If the resource is determined to be a significant historical or unique archaeological resource, additional measures would be taken to minimize or avoid significant effects, that may include (but are not limited to): avoidance; capping the site; deeding the site into a permanent conservation easement; or data recovery excavation. Implementation of Mitigation Measure CUL-1 would minimize the potential for the Proposed Project to adversely affect historical or archaeological resources by requiring worker awareness training and halting work and implementing data recovery or preservation procedures and reduce the potential impact to less than significant.

Mitigation Measure CUL-1: Inadvertent Discovery of Historical and Archaeological Resources and Worker Awareness Training.

1. The contractor shall comply with Sonoma Water's Standard Contract Documents regarding the discovery of cultural resources, including Native American cultural resources and items of historical and archaeological interest. The Sonoma Water Construction Inspector and construction personnel will be notified of the possibility of encountering cultural resources during project construction.
    a. Prior to initiation of ground-disturbing activities, Sonoma Water shall arrange for construction personnel to receive training about the kinds of cultural materials that could be present at the project sites and protocols to be followed should any such materials be uncovered during construction. An archaeologist who meets the U.S. Secretary of Interior's professional standards (48 CFR Parts 44738-44739 and Appendix A to 36 CFR 61) shall provide appropriate archaeological training, including the purpose of the training to increase awareness and knowledge of tribal cultural resources and appropriate protocols in the event of an inadvertent discovery. The Tribal Monitor shall provide appropriate tribal cultural resources training as determined by the Tribe. Training may be required during different phases of construction to educate new construction personnel.
2. The project specifications will provide that if discovery is made of items of historical, archeological, or cultural interest, the contractor will immediately cease all work activities in the area of discovery. Historical, archaeological, and cultural indicators may include, but are not limited to, dwelling sites, locally darkened soils, stone implements or other artifacts, fragments of glass or ceramics, animal bones, and human bones. After cessation of excavation, the contractor will immediately contact Sonoma Water's Construction Inspector. The contractor will not resume work until authorization is received from the Construction Inspector.
    a. In the event of unanticipated discovery of archaeological materials occurs during construction, Sonoma Water shall retain the services of a qualified professional archaeologist who meets the U.S. Secretary of Interior's professional standards (48 CFR Parts 44738-44739 and Appendix A to 36 CFR 61) to evaluate the significance of the items prior to resuming any activities that could impact the site.
    b. In the case of an inadvertent archaeological discovery, if it is determined that the find is potentially eligible for listing in the California Register of Historical Resources and/or National Register of Historic Places, and the site cannot be avoided, additional mitigation measures shall be implemented. Mitigation measures may include (but are not limited to): avoidance; capping the site; deeding the site into a permanent conservation easement; or data recovery excavation. Mitigation measures for historical resources shall be developed in consultation with responsible agencies, and the culturally affiliated Native American tribe. If data recovery excavation is necessary, Sonoma Water shall provide an Archaeological Resource Management and Data Recovery Plan, prepared by a qualified archaeologist, outlining recovery of the resource, analysis, and reporting of the find. The Archaeological Resource Management

and Data Recovery Plan shall be approved by Sonoma Water and affected Native American tribe. Implementation of the Archaeological Resource Management and Data Recovery Plan shall be conducted prior to work being resumed.

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5? – Less than Significant with Mitigation Incorporated.

Potential resources that constitute an archaeological site were not found during surveys. Geologic and soils mapping data indicate that soils within the study area are associated with both Latest Holocene (Qhay) and Early to Late Pleistocene (Qoa) landforms (GEI Consultants 2022). These bimodally distributed landforms are considered to have high archaeological sensitivities. Late Pleistocene sediments have high surface sensitivities, while Latest Holocene areas have high buried sensitivities. As such there is the potential to uncover previously unidentified historical or archaeological resources during ground disturbance, particularly during excavation of the proposed channel and tributaries. The disturbance, or damage, of a previously unidentified historical or archaeological resource would be a potentially significant impact.

Implementation of **Mitigation Measure CUL-1** would reduce potential impacts to less than significant by ensuring that construction work would halt within 50 feet of an unanticipated find so that a qualified archaeologist and a culturally-affiliated Native American representative could make additional recommendations if required. If the resource is determined to be a significant historical or unique archaeological resource, additional measures would be taken to minimize or avoid significant effects, that may include (but are not limited to): avoidance; capping the site; deeding the site into a permanent conservation easement; or data recovery excavation. Implementation of Mitigation Measure CUL-1 would minimize the potential for the Proposed Project to adversely affect historical or archaeological resources by requiring worker awareness training and halting work and implementing data recovery or preservation procedures and reduce the potential impact to less than significant.

c. Disturb any human remains, including those interred outside of formal cemeteries? – Less than Significant with Mitigation Incorporated.

Potential resources that constitute an archaeological site were not found during surveys. Geologic and soils mapping data indicate that soils within the study area are associated with both Latest Holocene (Qhay) and Early to Late Pleistocene (Qoa) landforms (GEI Consultants 2022). These bimodally distributed landforms are considered to have high archaeological sensitivities. Late Pleistocene sediments have high surface sensitivities, while Latest Holocene areas have high buried sensitivities. As such, there is the potential to uncover previously unidentified historical or archaeological resources during ground disturbance, particularly during excavation of the proposed channel and tributaries, although no human remains are anticipated to be discovered. Mitigation Measure CUL-2 requires that the Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5 process be followed. Under this process, if the coroner determines the remains are Native American, the coroner will contact the Native

American Heritage Commission. As provided in Public Resources Code Section 5097.98, the Native American Heritage Commission will identify the person or persons believed to be most likely descended from the deceased Native American. The Most Likely Descendent (MLD) makes recommendations for means of treating the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.If previously unknown human remains are inadvertently discovered during ground-disturbing activities, the impact would be significant. Implementation of **Mitigation Measure CUL-2** would ensure proper procedures are followed if previously unknown human remains are discovered and the impact would be less than significant after mitigation is incorporated.

Mitigation Measure CUL-2: Inadvertent Discovery of Human Remains
The project specifications shall require the contractor to comply with Public Resources Code 5097.98 and Health and Human Safety Code 7050.5, as they pertain to the discovery of human remains. If human remains are encountered, the contractor shall halt work in the vicinity of the find, and contact Sonoma Water's Construction Inspector and the Sonoma County Coroner in accordance with Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5. Work shall cease in the immediate area until the Section 5097.8 process is concluded.

3.6. Energy

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

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in significant impacts to Energy Resources if it would:

a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? – Less than Significant.

The Proposed Project would consume energy in the form of fossil fuels during construction and maintenance to operate heavy equipment and vehicles. This use of energy would be temporary and intermittent. The use of fuels would not be wasteful or unnecessary because their use is required to complete the project. Therefore, the Proposed Project would have less than significant impact on energy resources and no mitigation is required.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? – No Impact.

The Proposed Project would not obstruct a state or local plan for renewable energy or energy efficiency. Therefore, there would be no impact.

3.7 Geology and Soils

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

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Geology and Soils Setting

The Proposed Project site lies within the floodplain of the Laguna and the Santa Rosa Plain. Topography of the Proposed Project site is relatively flat ranging in elevation from approximately 51 to 63 feet above mean sea level and gentle slopes up and away from the channel. Sonoma Volcanics, Petaluma Formation, and alluvial deposits underlie much of the area (Cardwell 1958).

The Proposed Project is located within the seismically active North Bay/North Coast Area of California. The seismic environment in Northern California and the San Francisco Bay Area is characterized by the San Andreas Fault Zone, which formed due to major forces occurring at the boundary of shifting tectonic plates. This fault zone, and its northwest-trending folds and faults, control much of the geologic structure within the northern Coast Ranges. The major faults in the region include the San Andreas, Hayward-Rodgers Creek, Maacama-Garberville, Calaveras, and Green Valley faults (California Division of Mines and Geology 1980).

Regional Geology

The Proposed Project site is located within the Coast Ranges geomorphic province[1], which extends from the Pacific Ocean eastward to the Great Valley (Sacramento and San Joaquin valleys) and from the Oregon border southward to the Santa Ynez Mountains near Santa Barbara. The Coast Ranges province is generally characterized by northwest-trending mountain ranges, running roughly parallel to the San Andreas Fault Zone, composed of volcanic rocks and intervening valleys of relatively thick marine sediments. The Northern Coast Ranges are located north of San Francisco Bay and are largely composed of the Franciscan Complex (or Assemblage), which includes greywacke, shale, greenstone, basalt, chert, and sandstone that were ancient sea floor sediments. Franciscan rocks are overlain by volcanic cones and flows of the Quien Sabe, Sonoma and Clear Lake volcanic fields (California Division of Mines and Geology 1980).

Local Geology

Sonoma Volcanics, Petaluma Formation, and alluvial deposits underlie much of the Santa Rosa Plain, including the Proposed Project. The Sonoma Volcanics formed during volcanic activity approximately 3 to 6 million years ago and are generally found in hilly upland areas. The

[1] A geologic province is a region with similar bedrock, structure, history, and age. California contains 11 geologic provinces.

Petaluma Formation formed at approximately the same time and consists of claystones, siltstones, and mudstones formed from the deposition of eroded materials in upland areas. The alluvial deposits include the Huichica Formation and the Glen Ellen Formation. While the Huichica Formation is more recent, both consist of gravels, silt, sands, and clays. Alluvial fan deposits have been deposited on top of these formations (Cardwell 1958).

Faults and Seismicity

The Proposed Project is located within the seismically active North Bay/North Coast Area of California. The seismic environment in Northern California and the San Francisco Bay Area is characterized by the San Andreas fault zone, which formed due to major forces occurring at the boundary of shifting tectonic plates. This fault zone, and its northwest-trending folds and faults, control much of the geologic structure within the northern Coast Ranges. The major faults in the region include the San Andreas, Hayward-Rodgers Creek, Maacama-Garberville, Calaveras, and Green Valley faults (California Division of Mines and Geology, 1980).

The nearest known active fault is the Hayward-Rodgers Creek Fault, which extends northwest through Santa Rosa and is estimated to have a 33 percent chance of a greater than magnitude (M) 6.7 earthquake on the combined Rodgers Creek-Hayward fault system over the 30-year period from 2014 to 2043 (U.S. Geological Survey 2018). The Proposed Project does not cross the Hayward-Rodgers Creek fault zone.

A number of large earthquakes have occurred within this region in the historic past. Some of the significant nearby events include the 2000 Napa earthquake (M5.0, two (2) 1969 Santa Rosa earthquakes (M5.6, M5.7), the 2014 Napa earthquake (M6.0) and the 1906 San Francisco earthquake (M8+). Future seismic events in this region can be expected to produce strong seismic ground shaking at this site. The intensity of future shaking would depend on the distance from the Proposed Project site to the earthquake focus, magnitude of the earthquake and the response of the underlying soil and bedrock.

Soil Types

The primary soil type on the Proposed Project site is Clear Lake Clay, Ponded, with minor amounts of Pajaro Clay Loam and alluvial deposits (ATS 2020; GEI Consultants 2022). These soils occur in flat areas, contain thick clay material, and are poorly drained. They occur in high water table areas and are frequently ponded. These soils have low to moderate shrink-swell potential (lateral spreading) and low erosivity.

Paleontological Resources

Paleontological resources are the fossilized evidence of past life found in the geologic record. For the purpose of this document, paleontological resources refer to fossilized plant and animal remains of prehistoric species. Fossils are important scientific and educational resources because of their use in (1) documenting the presence and evolutionary history of particular groups of now-extinct organisms; (2) reconstructing the environments in which these organisms lived; and (3) determining the relative ages of the strata in which they occur, as well as the relative ages of the geologic events that resulted in the deposition of the sediments that formed these strata and in their subsequent deformation.

Paleontological resources are valued for the information they yield about the history of the earth and its past ecological settings. They represent a limited, non-renewable, impact-sensitive scientific and educational resource. Fossil remains such as bones, teeth, shells, and leaves are found in geologic deposits (i.e., rock formations). Paleontological resources, in general, include fossils as well as the collecting localities and the geologic formations that contain those fossils.

Rock formations that are considered of paleontological sensitivity are those rock units that have yielded significant vertebrate or invertebrate fossil remains. This includes, but is not limited to, sedimentary rock units that contain significant paleontological resources anywhere within its geographic extent. The Proposed Project site is primarily underlain by recent alluvial deposits (Cardwell 1958). Based on the Society for Vertebrate criteria, recent alluvial deposits have low potential to contain significant paleontological resources (Society of Vertebrate Paleontology 2010).

State Laws, Regulation, and Policies

Alquist-Priolo Earthquake Fault Zoning Act

The purpose of the Alquist-Priolo Earthquake Fault Zoning Act (1972) is to prevent the construction of buildings used for human occupancy on the surface trace of active faults in order to reduce hazards associated with surface fault rupture. The Alquist-Priolo Act requires the delineation of fault rupture zones along all active faults in California. Cities and counties must regulate certain development projects within the zones, including withholding permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement (Bryant W.A., 2007).

California Building Code

The California Building Code (also known as the California Building Standards Code or Title 24, California Code of Regulations) is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards (Bolt c1978-1988). The California Building Code incorporates by reference the Uniform Building Code with necessary California amendments. The Uniform Building Code is a widely-adopted model building code in the United States. About one-third of the text within the California Building Code has been tailored for California earthquake conditions (CCR c2013).

California Public Resources Code Section 5097

Section 5097 of the PRC protects paleontological resources and states part that a person shall not knowingly and willfully excavate upon, or remove, destroy, injure or deface any vertebrate paleontological site, or any other paleontological feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Geology and Soils if it would:

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?; ii. Strong seismic ground shaking?; iii. Seismic-related ground failure, including liquefaction?; iv. Landslides? – Less than Significant.

There are no active faults or potentially active faults underlying the Proposed Project sites according to California Geologic Survey maps (California Geological Survey, 2018). The Proposed Project is not located within an identified Alquist-Priolo Earthquake Hazard Zone (Calfornia Geological Survey, Revised 2018). The nearest known active fault is the Hayward-Rodgers Creek Fault, which extends northwest through Santa Rosa and is over 7 miles from the Proposed Project site. Since the Proposed Project is not located within an Alquist-Priolo Earthquake Fault Zone the likelihood of ground rupture from faulting at the Proposed Project site is low. Furthermore, the proposed project would not include the development of any structures that could be vulnerable to seismic-related ground shaking.

The Proposed Project site is located within areas at risk of ground shaking and liquefaction during an earthquake (SCPRMD 2014). Liquefaction susceptibility is high in areas near waterways, including the Laguna. The Proposed Project area is in a region with a “Very Strong” shaking hazard from an earthquake (SCPRMD 2014). Liquefaction and ground shaking can cause extensive damage to buildings and other structures. However, the Proposed Project would not include the development of any structures that would be affected by liquefaction or ground shaking.

The Proposed Project area does not include steep slopes or mapped areas of landslide potential; therefore, there would be no impact related to landslides.

Overall, the Proposed Project does not include the construction of any structures that could be damaged during an earthquake, the site is uninhabited, and the presence of people onsite during a large earthquake would be limited to a few people present during short-term construction activities. Therefore, the impact would be less than significant.

b. Result in substantial soil erosion or the loss of topsoil? – Less than Significant with Mitigation Incorporated.

The Proposed Project would excavate and backfill to reestablish the historic Laguna channel within the Laguna floodplain. Construction period ground disturbance could have a significant impact by increasing soil erosion or the loss of topsoil before the site is stabilized. However, the very low grade of the Laguna channel and broad floodplain, and construction during the dry

season would minimize the risk of erosion. Furthermore, the Proposed Project's extensive revegetation described in the Project Description section would reduce erosion by permanently stabilizing surfaces with natural vegetation. Because the Proposed Project would disturb more than one acre, the Proposed Project would be required to comply with the State Water Resources Control Board Construction General Permit. The Construction General Permit would require the preparation and implementation of a Stormwater Pollution Prevent Plan (SWPP) that would include measures designed to prevent erosion and control stormwater runoff. These practices and procedures would reduce the risk of erosion and sediment transport outside of the Proposed Project area. Mitigation Measure GEO-1 (Minimize erosion, sedimentation, and discharge to surface and groundwater) would further minimize onsite erosion. Implementation of the mitigation measure and SWPP would reduce this impact to less than significant. See Section 3.9, Item b, for more details on SWPP.

Mitigation Measure GEO-1: Minimize Erosion, Sedimentation, and Discharge to Surface and Groundwater

Sonoma Water will require contractors, through project contract specifications, and maintenance staff to implement the following in accordance with Caltrans BMP Manual (Caltrans, 2017) if not otherwise included in the project Storm Water Pollution Prevention Plan (SWPPP):

1. Soil disturbance shall be kept to the minimum footprint necessary to complete the project and existing vegetation should be preserved to the extent feasible.
2. Staging will occur on work areas, access roads, surface streets, designated stockpile areas, or other disturbed areas that are already compacted and only support ruderal vegetation. Similarly, all equipment and materials will be contained within the existing service roads, paved roads, or other pre-determined staging and stockpile areas. Stockpiling of materials, including portable equipment, vehicles and supplies (e.g., chemicals), shall be restricted to the designated construction staging areas.
3. All project-related items, including equipment, stockpiled material, temporary erosion control treatments, and trash, will be removed within 72 hours of project completion.
4. As necessary, to prevent sediment-laden water from being released during transport of spoils to onsite disposal locations, truck beds will be lined with an impervious material (e.g., plastic), or the tailgate blocked with wattles, hay bales, or other appropriate filtration material. Trucks may drain excess water by slightly tilting the loads and allowing the water to drain out through the applied filter, only within the active work area where the sediment is being loaded into the trucks.
5. No runoff from the staging areas will be allowed to enter waters of the State, including the creeks or storm drains, without being subjected to adequate filtration (e.g., vegetated buffer, hay wattles or bales, silt screens). The discharge of decant water from any onsite temporary sediment stockpile, or storage areas, to waters of the State, including surface waters or surface water drainage courses, outside of the active project site, is prohibited.
6. During the dry season (June 15 to October 15), if stockpiled soils will remain exposed and unworked for more than 7 days then erosion control measures will be utilized. During the wet season (October 16 to June 15), no stockpiled soils will remain exposed, unless surrounded by properly installed and maintained silt fencing or other means of erosion control.

7. Work will avoid significant rainfall events. Significant rainfall is defined as 0.1 inch of rain in a 24-hour period. Work will resume when conditions allow and as specified in the SWPPP and Construction General Permit for the Proposed Project.
8. In anticipation of the first significant rainfall event, exposed soils will be stabilized according to requirements of the SWPPP and Construction General Permit.
9. Following completion of construction or maintenance activities, upland soils should be seeded and stabilized using erosion control fabric, straw, and/or hydroseeding using California certified weed free native seeds appropriate for the site.
10. Erosion control fabrics shall consist of natural fibers that will biodegrade over time. No plastic or other non-porous material will be used as part of a permanent erosion control approach. Plastic sheeting may be used to temporarily protect a slope from runoff.
11. Erosion control measures shall be installed according to manufacturer's specifications.
12. Appropriate measures include, but are not limited to, the following (measures utilized would be implemented in accordance with the Caltrans BMP Manual (Caltrans, 2017)):
    a. Silt fences
    b. Straw bale barriers
    c. Brush or rock filters
    d. Storm drain inlet protection
    e. Sediment traps
    f. Sediment basins
    g. Erosion control blankets and mats
    h. Straw wattles
    i. Soil stabilization (i.e., tackified straw with native seed, jute or geotextile blankets, broadcast and hydroseeding, etc.)
13. All temporary construction-related erosion control methods (e.g., silt fences) shall be removed at the completion of construction, or as directed by a qualified erosion control specialist.

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 an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? – Less than Significant.

The Proposed Project site is very flat and does not contain any structures that could be affected by unstable soils or geologic units. Also, due to the flat terrain the potential for landslides or collapse is very low. The potential for liquefaction was previously discussed in Item a, above, and would be less than significant. Therefore, the impacts from unstable geologic units or soil would be less than significant.

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? – Less than Significant.

Expansive soil, or soil with a high shrink-swell potential, is influenced by the amount and type of clay in the soil. The soils at the Proposed Project site are clayey but are categorized as having a low and moderate shrink swell potential (USDA 1972). Also, there are no existing or proposed structures onsite that could be impacted expansive soils. Therefore, impacts relative to expansive soils would be less than significant.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? – No Impact.

No septic tanks or alternative wastewater disposal systems are included in the Proposed Project and the project does not require the disposal of wastewater. Therefore, there would be no impact.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? – No Impact.

The Proposed Project is not located in an area known for paleontological resources or geologic features. Paleontological resources, if present, are typically found in the sedimentary rock layer, which is far beneath of surface in the project vicinity. The Proposed Project site surface is primarily covered with alluvial deposits (Cardwell 1958) that have low potential to contain significant paleontological resources (Society of Vertebrate Paleontology 2010). Therefore, there would be no impact.

3.8 Greenhouse Gas Emissions

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

Greenhouse Gas Emissions Setting

The greenhouse gas emissions setting is provided along with relevant regulatory background and guidelines, and their applicability to the Proposed Project.

Certain gases in the atmosphere naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. This is sometimes referred to as the "greenhouse effect" and the gases that cause it are called "greenhouse gases." Some greenhouse gases (GHG) occur naturally and are necessary for keeping Earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect, and resulting in the increase of global average temperature.

Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) are the principal GHGs. When concentrations of these gases exceed natural concentrations in the atmosphere, the greenhouse effect may be intensified. CO_2, CH_4, and N_2O occur naturally, and are also generated through human activity. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 primarily results from off-gassing[2] associated with agricultural practices and landfills. CO_2 is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by

[2] Off-gassing is defined as the release of chemicals under normal conditions of temperature and pressure.

the same mass of CO_2. For example, CH_4 and N_2O are substantially more potent GHGs than CO_2, with GWPs of 21 and 310 times that of CO_2, respectively.

In emissions inventories, GHG emissions are typically reported as metric tons of CO_2 equivalents (CO_2e). CO_2e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of CO_2e emissions, both from residential developments and human activity in general.

Regulatory Setting

Federal Regulations

Supreme Court Ruling of Carbon Dioxide as a Pollutant

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA) and its amendments. The Supreme Court of the United States ruled on April 2, 2007, that CO_2 is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. The ruling in this case resulted in EPA taking steps to regulate GHG emissions and lend support for state and local agencies' efforts to reduce GHG emissions.

State

In California, the legal framework for GHG emission reduction has come about through an incremental set of Governors' Executive Orders, legislation, and regulations put in place since 2002. The major components of California's climate change initiative are reviewed below.

Executive Order S-3-05

Executive Order S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill (AB) 32 California Climate Change Scoping Plan

Assembly Bill 32 Requirements

In 2006, the California legislature passed Assembly Bill 32 (California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires the California Air Resource Board (CARB) to design and implement feasible and cost-effective emissions limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25-percent reduction in emissions). AB 32 anticipates that the GHG reduction goals will be met, in part, through local government actions. The CARB has identified a GHG reduction target of 15 percent from current levels for local governments (municipal and community-wide) and notes that successful implementation of the plan relies on local governments' land use planning and urban growth decisions because local

governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions.

Scoping Plan Provisions

Pursuant to AB 32, the CARB adopted a *Climate Change Scoping Plan* in December 2008 (re-approved by CARB on August 24, 2011) outlining measures to meet the 2020 GHG reduction goals. In order to meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business-as-usual emissions levels or about 15 percent from today's levels. The Scoping Plan recommends measures that are worth studying further, and that the State of California may implement, such as new fuel regulations. It estimates that a reduction of 174 million metric tons of CO_2e (about 191 million U.S. tons) from the transportation, energy, agriculture, forestry, and other sources could be achieved should the state implement all of the measures in the Scoping Plan. The Scoping Plan relies on the requirements of Senate Bill (SB) 375 to implement the carbon emission reductions anticipated from land use decisions (California Air Resources Board, 2008, re-approved 2011).

In May 2014, CARB published its First Update to the Scoping Plan. This update builds upon the initial Scoping Plan with new strategies and recommendations. The update defines CARB's climate change priorities over the next five years and sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 (California Air Resources Board, 2014).

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan) outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and "substantially advance toward our 2050 climate goals." It identified the reductions needed by each GHG emissions sector (e.g., transportation, industry, agriculture, etc.) (California Air Resources Board, 2017).

Executive Order B-30-15

On April 20, 2015, Governor Edmund G. Brown, Jr., signed Executive Order B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions to 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the United States to limit global warming below 2° Celsius, the warming threshold at which there will likely be major climate disruptions such as super droughts and rising sea levels. None of the targets stated in Executive Order B-30-15 have been adopted by the state legislature.

Senate Bill 32

In 2016, Senate Bill (SB) 32 codified the Executive Order B-30-15 target of 40 percent reduction below 1990 levels by 2030 and directed State regulatory agencies to develop rules and regulations to meet the 2030 State target.

Executive Order B-55-18

On September 10, 2018, Governor Edmund G. Brown, Jr., signed Executive Order B-55-18 to establish a California statewide goal of carbon neutrality by 2045. This goal is in addition to the existing statewide targets of reducing greenhouse gas emissions. The California Air Resources Board shall work with relevant state agencies to develop framework for implementation and accounting that tracks progress towards this goal and to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The California Natural Resources Agency, the California Environmental Protection Agency, the California Air Resources Board, and the California Department of Food and Agriculture shall include sequestration targets in the Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal.

Regional and Local Regulations

Bay Area Air Quality Management District

The BAAQMD's *CEQA Air Quality Guidelines* were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area (BAAQMD 2017). The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process and include recommended thresholds of significance, mitigation measures, and background air quality information. BAAQMD has identified screening criteria and significance criteria for development projects that would be applicable to the Project. If a project exceeds the Guidelines' GHG screening-level sizes, the project would be required to conduct a full GHG analysis using the following BAAQMD significance criteria:

1. Compliance with a Qualified GHG Reduction Strategy; or
2. 1,100 metric tons of CO_{2e} per year; or
3. 4.6 metric tons of CO_{2e} per service population

BAAQMD does not have thresholds of significance for construction-related GHG emissions, but requires quantification and disclosure of construction-related GHG emissions. GHG emissions from construction activities are short term. One-time, short-term emissions can be converted to average annual emissions by mathematically distributing them over the service life of the project.

The BAAQMD's 2017 Clean Air Plan contains 35 control measures aimed at reducing GHG emissions in the Bay Area and meeting the State of California's adopted targets of reducing emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. None of the 35 control measures are applicable

Sonoma County Climate Action 2020 and Beyond

The Sonoma County Regional Climate Action Plan: Climate Action 2020 and Beyond (RCAP) provides an overall strategy for reducing GHG emissions in each sector to meet a target of reducing emissions to 25 percent of 1990 levels by 2020 and provides the foundation for long-term success in reducing GHG emissions (Regional Climate Protection Authority, 2016). The Sonoma County Climate Action Plan is a non-binding advisory document.

Sonoma County General Plan 2020

The Sonoma County General Plan 2020 contains goals and policies related to greenhouse gas emissions in the following elements: Land Use, Open Space & Resource Conservation, and Circulation and Transit. However, the majority of goals, policies, and objectives are not relevant to the Proposed Project and are not discussed further with the exception of objective OSRC-14.4 listed below (Sonoma County Permit and Resource Management Department 2018).

> *OSRC-14.4: Reduce greenhouse gas emissions by 25 percent below 1990 levels by 2015*

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Greenhouse Gas Emissions if it would:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? - Less than Significant.

Construction activities associated with the Proposed Project would include excavation, fill, and revegetation for a habitat restoration project that would occur over the course of approximately four months. The majority of the Project-related GHG emissions would be generated on site from the use of heavy-duty off-road equipment, including an excavator, dump truck, water truck, etc. The equipment operation hours per day and number of required workdays would vary depending on the specific type of equipment and on the construction activity. GHG emissions would also be generated off-site associated with construction worker daily commutes and material and debris hauling, though cut and fill would be balanced on site to the extent feasible. As described in Section 3.3 Air Quality, the Proposed Project is located within the San Francisco Bay Area Air Basin, which is under the jurisdiction of the BAAQMD. The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, the BAAQMD identifies operations-related thresholds of significance for GHG emissions. The quantitative threshold for non-stationary source projects is annual operational emissions of more than 1,100 metric tons of carbon dioxide equivalent (CO2e) (BAAQMD 2017a). For comparative purposes, an analysis using BAAQMD's threshold of 1,100 metric tons of CO2e per year for non-stationary source projects was applied to the Proposed Project.

For projects that are linear in nature, (which channel creation could be considered), BAAQMD recommends using the most current version of Sacramento Metropolitan Air Quality Management District's (SMAQMD) Road Construction Emissions Model (RoadMod) to quantify construction-related GHG emissions. As shown in Table 3.8-1, the annual GHG emissions associated with construction of the Proposed Project at 97 metric tons of CO2e would not exceed the BAAQMD's 1,100 metric tons per year of CO_{2e} operational significance threshold. Modeling details can be found in Appendix D, Air Quality Modeling Results. Also, as needed maintenance of the Proposed Project would involve periodic onsite activities, which would result in negligible sources of GHG emissions. Therefore, GHG emissions generated during construction and maintenance of the Proposed Project would be a less-than-significant impact and no mitigation is required.

Table 3.8-1. Project-related Annual Construction GHG Emissions Compared to BAAQMD Thresholds for GHG

Year	GHG Emissions (MT CO2e per year)[a]
Total Construction-related Emissions	97
BAAQMD GHG Operational Threshold	1,100
Over Threshold?	No

[a]Emissions were modeled using SMAQMD Road Construction Emissions Model Version 9.0.0 (SMAQMD 2018).

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? - No Impact.

Existing plans and policies aimed at reducing GHG emissions apply to a variety of sources such as residential, transportation, agriculture, water, waste management and industry. There are no adopted GHG-related plans, policies, or regulations that are directly applicable to the Proposed Project, which is a habitat restoration project and would not result in GHG-intensive land use changes, population growth or new development of any kind. Therefore, the Proposed Project would not conflict with any applicable plan, policy, or regulation to reduce GHG emissions and there would be no impact.

3.9 Hazards and Hazardous Materials

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

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Hazards and Hazardous Materials Setting

Database searches were conducted to identified known hazardous waste or material sites in the vicinity of the Proposed Project. A Superfund Enterprise Management Search (SEMS) public access database search revealed no Superfund sites within the Proposed Project site (U.S. Environmental Protection Agency 2021). A database search of the GeoTracker, a website compiled by the State Water Resources Control Board to track cleanup sites, revealed no active sites identified in relation to the Proposed Project site.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Hazards and Hazardous Materials if it would:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? - Less than Significant.

The Proposed Project would involve the temporary transport and handling of small quantities of hazardous substances such as diesel fuels, lubricants, and solvents for equipment during construction and periodic maintenance activities. Sonoma Water staff and contractors would be required to use, store, and transport hazardous materials in accordance with local, state, and federal regulations, including California Occupational Safety and Health Administration (Cal/OSHA) and California Department of Toxic Substances Control (DTSC) requirements and manufacturer's instructions, during project construction and maintenance activities. The Proposed Project would be required to implement and comply with existing hazardous material regulations; therefore, the temporary transport, use, and disposal of hazardous materials would be unlikely to result in a significant hazard to the public or the environment. Therefore, this impact would be less than significant.

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? – Less than Significant with Mitigation Incorporated.

There are no reported or anticipated sources of hazardous material contamination within the project site. The Proposed Project would involve the temporary, transport and handling of small quantities of hazardous substances such as diesel fuels, lubricants, and solvents for equipment

during construction and periodic maintenance activities. Sonoma Water staff and contractors would be required to use, store, and transport hazardous materials in accordance with local, state, and federal regulations, including Cal/OSHA and DTSC requirements and manufacturer's instructions, during project construction and maintenance activities. The Proposed Project would be required to implement and comply with existing hazardous material regulations; therefore, the project would be unlikely to result in a significant hazard to the public or the environment. If these fuels and lubricants were released into the water or ground during application or equipment refueling or maintenance, contamination and harm to the environment could result in 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. Implementation of Mitigation Measures GEO-1 (Minimize erosion, sedimentation, and discharge to surface and groundwater) and HAZ-1 (Spill Prevention and Response) would further minimize the potential effects of an unforeseeable release of hazardous materials. The potential impact would be reduced to less than significant with implementation of Mitigation Measure HAZ-1.

Mitigation Measure HAZ-1: Spill Prevention and Response
Sonoma Water shall require contractors, through project specifications, to prepare a Storm Water Pollution Prevent Plan (SWPPP). The SWPPP shall comply with Caltrans Storm Water Pollution Prevention Plan and Water Pollution Control Program Preparation Manual and the Caltrans Construction Site Best Management Practices Manual. Sonoma Water will require contractors, through project contract specifications, and maintenance staff to follow the SWPPP during all project activities as well as implement the following measures:

1. All field personnel shall be appropriately trained in spill prevention, hazardous material control, and cleanup of accidental spills.
2. Equipment and materials for cleanup of spills will be available on site and spills and leaks will be cleaned up immediately and disposed of in accordance with local, state, and federal regulations.
3. Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations). Spill clean-up materials will be stockpiled where they are readily accessible. All field personnel shall be advised of these locations and trained in their appropriate use.
4. During construction and maintenance activities, Sonoma Water staff and contractor(s) will routinely inspect the work site to verify that items 1-3 above are properly implemented and maintained.
5. Absorbent materials will be used on small spills located on impervious surface rather than hosing down the spill; wash waters shall not discharge to the storm drainage system or surface waters. For small spills on pervious surfaces such as soils, wet materials will be excavated and properly disposed rather than burying it. The absorbent materials will be collected and disposed of properly and promptly.
6. Vehicle and equipment maintenance activities will be conducted offsite or in a designated, protected area away from flowing water equipped with secondary containment and designed to avoid a direct connection to underlying soil, surface water, or the storm drainage system. For stationary equipment that must be fueled

onsite, secondary containment, such as a drain pan or drop cloth, shall be provided in such a manner to prevent accidental spill of fuels to underlying soil, surface water, or the storm drainage system.

7. All vehicles and equipment will be kept clean. Excessive build-up of oil or grease will be avoided. Incoming vehicles and equipment will be checked for leaking oil and fluids (including delivery trucks, and employee and subcontractor vehicles). Leaking vehicles or equipment will not be allowed onsite.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? – No Impact.

The nearest school is Summerfield Waldorf School, located 1.5 miles from the Proposed Project site. Therefore, the Proposed Project would not emit hazards within one-quarter mile of an existing or proposed school and there would be no impact.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? – No Impact.

According to the Department of Toxic Substances Control's Hazardous Waste and Substances Site List (CalEPA 2021), there are no hazardous waste and substances sites located at or near the Proposed Project. Therefore, the Proposed Project would not create a significant hazard to the public or environment and there would be no impact.

e. For a project located within an airport land use plan area 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? – No Impact.

The Proposed Project is not located within or near an airport land use area (County of Sonoma 2021d). The nearest airport is Charles M. Schultz Airport, located 2 miles away. The airport land use plan applies only to new development. The Proposed Project components do not include development. Therefore, the Sonoma County's Comprehensive Airport Land Use Plan is not applicable, and there would be no impact.

f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? – No Impact.

During Proposed Project construction and maintenance activities no road closures are anticipated. However, if unexpected lane closures or traffic generated by project activities were to interfere with emergency response measures such that response times were extended, a significant impact would result. The Proposed Project would ensure that temporary lane closures are avoided or minimized and advanced notice provided in the project area to avoid inadequate emergency access by implementation of Mitigation Measure TRA-1. The Proposed

Project would have a less-than-significant impact on emergency response or evacuations during construction and maintenance.

g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? - Less than Significant.

The Proposed Project area is not located within a Fire Hazard Severity Zone (Sonoma County, 2020). The Proposed Project site does not contain any structures and is uninhabited. The Proposed Project's construction and maintenance activities would not involve placement of people or habitable structures that would result in exposure to a significant risk of wildland fires. Therefore, this impact would be less than significant.

3.10 Hydrology and Water Quality

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

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☒	☐	☐

Hydrology and Water Quality Setting

Climate and Surface Water Hydrology

Sonoma County has a Mediterranean climate characterized by warm, dry summers and mild, moist winters. The majority of annual precipitation in this region occurs as rain that falls during the period between November and April. Annual precipitation varies but average precipitation during the last century was 31 inches. Precipitation patterns in the region are influenced by local topography; correspondingly, mean annual precipitation generally increases with elevation. Stream discharge is determined by precipitation runoff bringing higher flows during winter and lower flows supported by groundwater during dry summer conditions.

The Proposed Project site is located in the Laguna de Santa Rosa watershed. This watershed drains from Sonoma Mountain across the Santa Rosa Plain before flowing into the Russian River. It is the largest tributary to the Russian River and drains an area of approximately 254 square miles. The Proposed Project site is located along the Laguna in the lower portion of the watershed. The major contributors of flow in the Proposed Project site are the Laguna and Santa Rosa Creek that converges with the Laguna upstream of the project area. In addition, Mark West Creek converges with the Laguna downstream of the Proposed Project site. During peak storm events flows from the Russian River (and Mark West Creek) will backwater the lower Laguna, including the Proposed Project site.

Surface Water Quality

Flows in the Proposed Project area are generated primarily by stormwater runoff. The mix of urban, rural, agricultural, and undeveloped land uses in the Laguna watershed contributes to varied pollutant types and concentrations that flow through the Proposed Project site. In the urbanized areas of the watershed, storm water runoff can entrain urban pollutants generated by residential, commercial, and industrial land uses. These pollutants typically include sediment, oil and grease, heavy metals, pesticides, and debris. In the agricultural areas of the watershed, pollutants can include contaminants from livestock manure and chemical fertilizers. Rural residential land uses can potentially contribute pollutants through malfunctioning onsite sewage disposal systems in areas without access to municipal wastewater treatment systems.

The Regional Water Quality Control Boards in California implement water quality control plans (basin plans), which characterize the region's natural water quality, potential beneficial uses, water quality problems, and defines programs to achieve the water quality objectives

(NCRWQCB 2018). The Proposed Project is within the Russian River Hydrologic Unit and is covered by North Coast Region Basin Plan implemented by NCRWQCB.

Groundwater Resources

The principal water-bearing materials in Sonoma County are the alluvial deposits and sedimentary units of the valleys as well as some of the volcanic rocks. Natural recharge takes place along streams, rivers, and through direct infiltration of precipitation through surficial and permeable portions of the water-bearing materials. Development in these areas can increase surface runoff and reduce groundwater quality and recharge capability.

The Sustainable Groundwater Management Act (SGMA) was enacted in 2014. SGMA requires governments and water agencies in high and medium priority basins to form Groundwater Sustainability Agencies (GSAs) to manage groundwater sustainably and adopt Groundwater Sustainability Plans (GSP). The Proposed Project is located in the Santa Rosa Plain Groundwater Subbasin within the North Coast hydrologic region and is overseen by the Santa Rosa Plain Groundwater Sustainability Agency (CDWR 2020). This basin is designated as a "medium/high" priority by the California Department of Water Resources and a GSP has been completed.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Hydrology and Water Quality if it would:

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? - Less than Significant with Mitigation Incorporated.

Water quality and waste discharge are regulated under the federal Clean Water Act and NCRWQCB issues Water Quality Certifications as required by Section 401 of the Act. Sonoma Water would request and comply with all provisions of the issued Water Quality Certification. The Proposed Project's construction and maintenance activities would require work within the Laguna, which could potentially impact water quality. Also, staging and stockpiling of materials could result in discharges that degrade surface waters. The Proposed Project would avoid or minimize accidental releases of sediment and contaminants from ground disturbance during construction and maintenance activities by conducting activities during the dry low-flow season, isolating the work area with coffer dams (if needed), and filtering water during dewatering as described in the project description. Mitigation measures would further limit the potential for impacts to surface and groundwater quality, including Mitigation Measure HAZ-1 (Spill Prevention and Response) and Mitigation Measure GEO-1 (Minimize erosion, sedimentation, and discharge to surface and groundwater). Implementation of these mitigation measures would reduce the level of impact to surface and groundwater quality to less than significant.

b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? – No Impact.

The Proposed Project would not involve groundwater pumping that could decrease groundwater supplies. In addition, the Proposed Project would not interfere with groundwater recharge. No impervious surfaces would be constructed. The realignment of the Laguna channel to its historic route would increase the linear length of the channel, which may slightly increase groundwater recharge. Overall, the Proposed Project would not adversely affect groundwater supplies and recharge capability. Therefore, there would be no impact.

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

i.) result in substantial erosion or siltation on- or off-site? – Less than Significant with Mitigation Incorporated.

The Proposed Project would realign a portion of the existing engineered Laguna channel to its historical alignment. However, the new alignment would be adjacent to the existing channel and within the floodplain the of the Laguna, which is inundated during winter wet season. The Proposed Project's construction and maintenance would require ground disturbance that could potentially cause significant erosion. However, implement of Mitigation Measure GEO-1 (Minimize erosion, sedimentation, and discharge to surface and groundwater during construction and maintenance activities) would reduce this impact to less than significant.

ii.) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite? – No Impact.

The Proposed Project would realign a portion of the existing engineered Laguna channel to its historical alignment. However, the new alignment would not change the amount of surface runoff or the amount of flooding that occurs onsite or downstream. The entire project area is within the floodplain of the Laguna that is inundated annually. The Proposed Project would not change flooding over the existing flood conditions onsite. Therefore, there would be no impact.

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? – No Impact.

The Proposed Project would not create or contribute runoff over conditions that currently exist onsite, including polluted runoff. Therefore, there would be no impact.

iv.)impede or redirect flood flows? – No Impact.

The Proposed Project would redirect flood flows by realigning the existing engineered Laguna channel to its historic route. Both of these alignments are contained within the floodplain of the Laguna and are inundated annually. The new alignment would not impede flows, rather convey flows along a more natural path. Although the Proposed Project would redirect flows, this alteration would be to a more natural alignment and is a benefit. Therefore, there would be no adverse impact.

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? – No Impact.

The Proposed Project is not located in a tsunami or seiche zone. There are no known pollutants occurring onsite that would be released under the existing flood patterns along the Laguna, see Section 3.9 Hazards and Hazardous Materials. Therefore, there would be no impact.

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? – Less than Significant with Mitigation Incorporated.

The Proposed Project is within the North Coast Region Basin Plan implemented by the NCRWQCB. The Basin Plan requirements would be followed through the conditions of the Proposed Project's Water Quality Certification and SWPP, as stated in Mitigation Measure BIO-6: Protect jurisdictional waters and wetlands and GEO-1 (Minimize erosion, sedimentation, and discharge to surface and groundwater). The Proposed Project would not impact groundwater supplies or recharge, see Item b above, and would not conflict with the GSP for the Santa Rosa Plain Subbasin. Therefore, there would be a less than significant impact with the implementation of mitigation.

3.11 Land Use and Planning

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

Land Use and Planning Setting

The Proposed Project site is located in central Sonoma County in the unincorporated portion of Sonoma County. The Proposed Project's land use is defined in the Sonoma County General Plan 2020 as Land Extensive Agriculture (LEA) 60 (Sonoma County 2020).

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Land Use and Planning if it would:

a. Physically divide an established community? – No Impact.

The Proposed Project would not permanently affect access to any of the surrounding land uses, nor create any new permanent, physical barriers between developed areas. Therefore, the Proposed Project would not divide an established community and there would be no impact.

b. Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? – No Impact.

The land use designation of Proposed Project site is currently Land Extensive Agriculture 60. This designation would not change with implementation of the Proposed Project. Therefore, there would be no impact.

3.12 Mineral Resources

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

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Mineral Resources if it would:

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? – No Impact.

There are no mineral resource areas in Proposed Project site identified in the Sonoma County General Plan 2020 (County of Sonoma, 2020a). Therefore, there would be no impact.

b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? – No Impact.

There are no mineral resource areas in Proposed Project site identified in the Sonoma County General Plan 2020 (County of Sonoma, 2020a). The Proposed Project would not involve any activities that would 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 or of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, there would be no impact.

3.13 Noise

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

Noise Setting

The environmental setting for noise includes all areas that could be affected by activities associated with the Proposed Project. Relevant background topics, guidelines, regulatory criteria, and their applicability to the Proposed Project are provided below.

Noise Background

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the

additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).

Noise Exposure and Community Noise

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. However, noise levels rarely persist consistently over a long period of time. In fact, community noise varies continuously with time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. Background noise levels change throughout a typical day, but do so gradually, corresponding with the addition and subtraction of distant noise sources and atmospheric conditions. The addition of short duration single event noise sources (e.g., aircraft flyovers, horns, sirens) makes community noise constantly variable throughout a day.

These successive additions of sound to the community noise environment vary the community noise level from instant to instant requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts.

Noise Definitions

Time-varying characteristics of environmental noise are described using statistical noise descriptors. Noise descriptors discussed in this analysis are summarized below:

Leq: The equivalent sound level is used to describe noise over a specified period of time, in terms of a single numerical value. The Leq is the constant sound level that 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).

L50 The noise level that is equaled or exceeded 50 percent of the specified time period. The L50 represents the median sound level.

L90 The noise level that is equaled or exceeded 90 percent of the specified time period. The L90 is sometimes used to represent the background sound level.

Ldn: The day-night noise level (Ldn) average of the A-weighted sound levels occurring over a 24-hour period. The Ldn accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted

(penalized) by adding 10 dB to take into account the greater annoyance of nighttime noises.

CNEL: Similar to the L_{dn}, the Community Noise Equivalent Level (CNEL) adds a 5-dB *penalty* for the evening hours between 7:00 p.m. and 10:00 p.m. in addition to a 10-dB penalty between the hours of 10:00 p.m. and 7:00 a.m.

L_{max}: The instantaneous maximum noise level measured during the measurement period of interest.

Effects of Noise on People

There is no universally acceptable way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way the new noise compares to the existing noise levels to which one has adapted: the so called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise would be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

1. Except in carefully controlled laboratory experiments, a change of 1-dB cannot be perceived;
2. Outside of the laboratory, a 3-dB change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response;
3. A change in level of at least 5-dB is required before any noticeable change in human response would be expected; and
4. A 10-dB change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. A ruler is a linear scale: it has marks on it corresponding to equal quantities of distance. One way of expressing this is to say that the ratio of successive intervals is equal to one. A logarithmic scale is different in that the ratio of successive intervals is not equal to one. Each interval on a logarithmic scale is some common factor larger than the previous interval. A typical ratio is 10, so that the marks on the scale read: 1, 10, 100, 1,000, 10,000, etc., doubling the variable plotted on the x-axis. The human ear perceives sound in a non-linear fashion; hence, the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Sound level naturally decreases with greater distance from the source. This basic attenuation rate is referred to as the *geometric spreading loss*. The basic rate of geometric spreading loss

depends on whether a given noise source can be characterized as a point source or a line source. Point sources of noise, including stationary mobile sources such as idling vehicles or on-site construction equipment, attenuate (lessen) at a rate of 6 dB per doubling of distance from the source. In many cases, noise attenuation from a point source increases by 1.5 dB from 6 dB to 7.5 dB for each doubling of distance due to ground absorption and reflective wave canceling. These factors are collectively referred to as *excess ground attenuation*. The basic geometric spreading loss rate is used where the ground surface between a noise source and a receiver is reflective, such as parking lots or a smooth body of water. The excess ground attenuation rate (7.5 dB per doubling of distance) is used where the ground surface is absorptive, such as soft dirt, grass, or scattered bushes and trees.

Widely distributed noises such as a street with moving vehicles (a “line” source) typically would attenuate at a lower rate of approximately 3 dB for each doubling of distance between the source and the receiver. If the ground surface between source and receiver is absorptive rather than reflective, the nominal rate increases by 1.5 dB to 4.5 dB for each doubling of distance. Atmospheric effects, such as wind and temperature gradients, can also influence noise attenuation rates from both line and point sources of noise. However, unlike ground attenuation, atmospheric effects are constantly changing and difficult to predict (California Department of Transportation 2013).

Vibration

Vibration Characteristics

Vibration is an oscillatory motion through a solid medium in which the motion’s amplitude can be described in terms of displacement, velocity, or acceleration. There are several different methods that are used to quantify vibration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. Some common sources of vibration are trains, buses on rough roads, and construction activities such as blasting, pile driving, and heavy earth-moving equipment.

Vibration Definitions

Several different measurements are used to quantify different aspects of vibration. One measurement is the peak particle velocity (PPV), which is most frequently used to describe vibration impacts to buildings. Another measurement is the root mean square (RMS) amplitude, which is most frequently used to describe the effect of vibration on the human body. A third measurement is decibel notation (VdB or Lv), commonly used to measure RMS amplitude (Federal Transit Administration 2006).

Ground-borne Noise

Ground-borne noise refers to the rumbling sound caused by the vibration of surfaces within a building. The annoyance potential of ground-borne noise is characterized in dBA units. Due to differences in the medium the sound is travelling through, ground-borne noises are characteristically of lower frequency sounds than air-borne noise. Due to the non-linearity of human hearing that causes sounds dominated by low-frequency components to seem louder,

ground-borne noise with a level of 40 dBA typically sounds louder than 40 dBA air-borne noise (FTA 2006). Therefore, limits for ground-borne noise are lower than for air-borne noise.

Typical Perceptible Levels of Ground-borne Vibration

In contrast to air-borne noise, ground-borne vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 VdB or lower, well below the threshold of perception for humans, which is approximately 65 VdB. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible (FTA 2006).

Structural Response to Vibration

Structural response to vibration is typically evaluated in terms of PPV, which is often used since it is related to the stresses that are experienced by buildings. Various general standards are contained in the International Standards Organization standards 3945, 4866, and 7626-1. The FTA identifies limit vibration damage threshold criteria set by these standards. At a PPV of 0.5 inches per second for reinforced-concrete, steel or timber (no plaster), PPV of 0.3 inches per second on engineered concrete and masonry (no plaster), PPV of 0.20 inches per second for non-engineered timber and masonry buildings (i.e., fragile buildings), and PPV of 0.12 inches per second for buildings extremely susceptible to vibration (i.e., fragile historic buildings) (FTA 2006).

Construction Vibration

Construction activities can result in varying degrees of ground vibration, depending on the equipment and methods employed. Operation of construction equipment causes ground vibrations that spread through the ground and diminish rapidly in strength with distance. Buildings founded on the soil in the Proposed Project vicinity of a construction site respond to these vibrations with varying results, ranging from no perceptible effects at the lowest levels, low rumbling sounds and perceptible vibrations at moderate levels, and slight damage at the highest levels.

Ground vibrations from construction activities do not often reach the levels that can damage structures, but they can achieve the audible and noticeable ranges in buildings very close to the site. A possible exception is the case of fragile buildings, many of them old, where special care must be taken to avoid damage. The construction activities that typically generate the most severe vibrations are blasting and impact pile-driving (FTA 2006).

Regulatory Framework

Federal, State, and local agencies regulate different aspects of environmental noise. Federal and State agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while local agencies regulation of stationary sources and development of land use noise compatibility policy is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans tend to identify general

principles intended to guide and influence development plans; and local noise ordinances and codes establish standards and procedures for addressing specific noise sources and activities. Below detail the settings for Federal, State and local Sonoma County and City of Sonoma regulatory standards related to noise and vibration.

Federal

In 1972, the Noise Control Act was established to address the concerns of noise as a growing danger to the health and welfare of the Nation's population, particularly in urban areas. In 1974, in response to the Noise Control Act, the U.S. Environmental Protection Agency (EPA) published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. **Table 3.13-1** summarizes U.S. EPA findings for residential land uses.

Table 3.13-1. Sound Levels That Protect Public Health

Category	Measure of Exposure	Indoor			Outdoor		
		Activity Interference	Hearing Loss	To Protect Against Both Effects	Activity Interference	Hearing Loss	To Protect Against Both Effects
Residential with Outside Space	Ldn	45	70	45	55	70	55
Residential with No Outside Space	Ldn	45	70	45	-	-	-

NOTES: Sound levels are yearly average equivalent in decibels (dB); the exposure period that results in hearing loss at the identified level is a period of forty years.
SOURCE: U.S. Environmental Protection Agency, 1974

The Occupational Safety and Health Administration (OSHA) aims to ensure worker safety and health in the United States by working with employers and employees to create better working environments. With regard to noise exposure and workers, OSHA regulations set forth accepted criteria to protect the hearing of workers exposed to occupational noise. Noise exposure regulations are listed in 29 Code of Federal Regulations (CFR) Section 1910.95. Most applicable to this project, 1910.95(c)(1) states that an employer shall administer a hearing conservation program whenever noise exposure levels equal or exceed an 8-hour time-weighted average sound level of 85 dBA.

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR, Part 205, Subpart B. The federal truck pass-by noise standard is 80 dBA at 15 meters (approximately 49 feet) from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

State

The State of California adopted the California Noise Insulation Standards (California Code of Regulations, Title 24, Part 2) in 1974.[3] These standards set forth an interior standard of 45 dBA Ldn for habitable spaces. These standards may be applied to residences located near construction activities or stationary noise sources as a method of examining potentially intrusive noise.

The State of California encourages each local government to perform noise studies and implement a noise element as part of its general plan. The Office of Noise Control at the California Department of Health Services published guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The concepts of these guidelines for land use compatibility are incorporated in the Noise and Safety Element of the Santa Rosa General Plan.

There are no adopted state policies or standards for ground-borne vibration. However, the Caltrans' *Transportation and Construction Vibration Guidance Manual* has identified vibration thresholds for adverse human reaction and risk of architectural damage to buildings (California Department of Transportation 2013. According to Caltrans' guidance, the building damage threshold for older residential structures is 0.3 inch/second PPV and the vibration threshold where vibration level increases are considered strongly perceptible is 0.1 inch/second PPV.

Local

At the local level, noise is addressed through the implementation of general plan policies, including noise and land use compatibility guidelines, and through enforcement of noise ordinances. General plan policies provide guidelines for determining whether a noise environment is appropriate for a proposed or planned land use. Local noise ordinances regulate noise sources such as mechanical equipment and amplified sounds, as well as determine allowable hours of heavy equipment operation.

Sonoma County General Plan 2020

The *Sonoma County General Plan 2020* Noise Element Policy NE1b addresses transportation noise (traffic on public roadways, railroads and airports) due to land use development and noise standards (County of Sonoma, 2020). The Proposed Project is not a land use development project; therefore, this policy and its noise standards are not applicable to the Proposed Project. The Sonoma County General Plan 2020 Noise Element Policy NE-1c addresses non-transportation-related (stationary) noise from new projects (operational noise resulting from new sources). It does not specifically address intermittent or short-term construction and maintenance noise (equipment) and currently there is no adopted noise ordinance in the County of Sonoma Municipal Code. The Sonoma County General Plan 2020 Policy NE-1h calls for the County to adopt a noise ordinance that would include noise performance standards (listed in Table 3.13-1) and other polices with the intent of protecting people from existing or future excessive levels of noise that interfere with sleep, communication, relaxation, health or legally-permitted use of property. A noise ordinance has not been adopted to date, but Policy NE-1h does allow that the

[3] California *Code of Regulations*, Title 24, Part 2, Appendix Chapters 12 and 12A (known as Building Standards Administrative Code, California Building Code).

noise ordinance may exempt or modify noise requirements for certain uses, including construction activities.

Guidelines for the Preparation of Noise Analysis

The General Plan Noise Element calls for the preparation of an acoustical analysis or noise analysis (noise analysis) prior to approval of any discretionary project involving a potentially significant new noise source or a noise sensitive land use in a noise impacted area. The Guidelines for the Preparation of Noise Analysis (County of Sonoma Permit Resources Management Department 2019) serve as a tool to implement the General Plan Noise Element policies by providing the following: 1) criteria to determine when a noise analysis is required; 2) minimum qualifications for persons preparing a noise analysis; and 3) substantive requirements for a noise analysis, including format content, standards, and thresholds of significance. The Proposed Project is not a land use development project and would not introduce a new noise source; therefore, a noise analysis is not required.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Noise Resources if it would:

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 a local general plan or noise ordinance, or applicable standards of other agencies? – Less than Significant with Mitigation Incorporated.

Sonoma County currently does not have a noise ordinance. The Sonoma County General Plan 2020 contains the following policy related to construction equipment and vehicles: Policy NE-1i: County equipment and vehicles shall comply with adopted noise level performance standards consistent with the best available noise reduction technology (County of Sonoma, 2020a). The General Plan also provides guidance for reviewing new permanent projects and new transportation projects but does not address review of temporary construction noise.

As shown in Table 3.13-2, the typical noise levels that would be produced during construction would range from 76 to 85 dBA at 50 feet and occur intermittently during the four-month construction period during daytime hours. The nearest sensitive receptor, a residence, is located approximately 400 feet west of the Proposed Project site.

Table 3.13-2. Anticipated equipment, use period, and reference noise levels for the Laguna-Mark West Creek Watershed Master Restoration Planning Project – High Priority Project.

Equipment description	Anticipated equipment use period (June 15- Oct 15)	Reference noise level (Lmax at 50 feet [dBA])
Excavator	7am-7pm weekdays; 8am-6pm Saturday	81
Dozer	7am-7pm weekdays; 8am-6pm Saturday	85
Off road dump truck	7am-7pm weekdays; 8am-6pm Saturday	76

Source: USDOT 2006

The Proposed Project construction and maintenance activities could cause a temporary increase in noise in the Proposed Project vicinity. However, the Proposed Project would restrict

construction and maintenance activities to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturdays. No construction or maintenance would be scheduled on Sundays or on holidays. Limiting construction and maintenance activities to the stated time periods would ensure that construction noise would not result in substantial temporary or periodic increases in ambient noise levels that would result in annoyance or sleep disturbance of nearby sensitive receptors. The distance from construction to sensitive receptors, the attenuating effects of the existing dense riparian vegetation, and the movement of construction equipment to different areas around the Proposed Project Site would reduce the impact of construction noise further. Operationally, there would be no increase in ambient noise levels and would likely be a decrease due to no farm equipment on the site. Implementation of **Mitigation Measure NOI-1 (Avoid and Minimize Ambient Noise)** would restrict noise-producing construction activities to daytime hours on Monday through Saturday. Therefore, there would be a less-than-significant impact with mitigation incorporated.

Mitigation Measure NOI-1: Avoid and Minimize Ambient Noise
Sonoma Water will require contractors, through project contract specifications, and maintenance staff to implement in the following:

1. Work will be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturday. No construction shall be permitted on Sunday or on holidays.
2. Power equipment (vehicles, heavy equipment, and hand equipment) will be equipped with manufacturer's sound-control devices, or alternate sound control that is no less effective than those provided as original equipment. Equipment will be operated and maintained to meet applicable standards for construction noise generation. No equipment will be operated with an unmuffled exhaust.

b. Generation of excessive groundborne vibration or groundborne noise levels? – Less than Significant.

Construction equipment can generate perceptible groundborne vibration and groundborne noise, which varies depending on the vehicle type, weight, and soil/pavement conditions. The nearest sensitive receptor is a residence located approximately 400 feet west of the Proposed Project site. The types of equipment used during construction would not expose people to excessive groundborne vibration due to the amount of vibration generated and the amount of distance between where construction would occur in the Proposed Project site and the nearest sensitive receptors. Therefore, the impact would be less than significant.

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? – No Impact.

The Proposed Project is not located within or near an airport land use area or the Proposed Project vicinity of a private airstrip. The closest airport is Charles M. Schultz Airport, located 2 miles away. Therefore, there would be no impact.

3.14 Population and Housing

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

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Population and Housing if it would:

a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? – No Impact.

The Proposed Project would not involve new development or extension of infrastructure that could directly or indirectly induce population growth in the area, nor would the Proposed Project create the demand for additional housing. Therefore, the Proposed Project would have no impact.

b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? – No Impact.

There are no existing housing units in the Proposed Project site, and construction of replacement housing would not be required. Therefore, there would be no impact.

3.15 Public Services

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

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Public Services if it would:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: i. Fire protection,ii. police protection, iii. schools, iv. parks, v. other public facilities? – No Impact.

The Proposed Project would not increase the population in the Proposed Project site, nor would it alter the existing population distribution temporarily or permanently that could increase the need for additional governmental facilities. The Proposed Project would not increase demand for fire and police protection, schools, parks, or other public facilities and there would be no impact.

3.16 Recreation

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

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Recreation if it would:

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? – No Impact.

As noted in Section 3.14, Population and Housing, the Proposed Project would not result in population growth that could increase the use of existing neighborhood and regional parks. The Proposed Project site is not used for recreation. Therefore, no nearby neighborhood, regional parks, or other recreational facilities would experience an increase of traffic from the temporary loss of an area used for recreation. Therefore, there would be no impact.

b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? – No Impact.

The Proposed Project does not include recreational facilities and would not require the creation or expansion of recreational facilities. Therefore, there would be no impact.

3.17 Transportation

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

Transportation Setting

County of Sonoma General Plan 2020

The County of Sonoma General Plan 2020 Circulation and Transit Element includes goals, objectives, and policies that support movement of automobiles and support alternative modes of transportation (County of Sonoma, 2020b). Regarding construction of projects that could impact circulation, particularly for bicycles and pedestrians, the General Plan includes the following policy:

Policy CT-3z: Require road construction projects to minimize their impacts on bicyclists and pedestrians through the proper placement of construction signs and equipment and by providing adequate, safe, well-marked detours. Where it is safe to do so, allow bicyclists and pedestrians to pass through construction areas in order to avoid detours. Where two-way bicycle and pedestrian travel can be safely accommodated in a one-way traffic control zone, adequate signage shall be placed to alert motorists of bicycles and pedestrians in the lane (Sonoma County Permit and Resources Management Department 2008).

Sonoma County Transportation Authority Moving Forward 2040

The Sonoma County Transportation Authority's (SCTA) Comprehensive Transportation Plan, called Moving Forward 2040, outlines the following goals:

1. Maintain the System
2. Relieve Traffic Congestion

3. Reduce Greenhouse Gas Emissions
4. Plan for Safety and Health
5. Promote Economic Vitality

To support these goals, Moving Forward 2040 proposes road and transit projects that would improve circulation of vehicles and promote alternative modes of transportation (SCTA 2016).

Senate Bill 743

Senate Bill 743 (Public Resources Code section 21099) required changes to California Environmental Quality Act analysis of transportation impacts to emphasize reduction of greenhouse gas emissions in place of an emphasis on level of service. Therefore, the analysis below does not address level of service but does estimate vehicle miles traveled (VMT) for construction-related activities.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Transportation if it would:

a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? – No Impact.

The Proposed Project is not a transportation project. The Proposed Project's construction, maintenance, and operation activities would be consistent with the goals and objectives of the Sonoma County General Plan and SCTA Comprehensive Transportation Plan by maintaining the existing roadways in the Proposed Project site. Additionally, there are no bicycle or pedestrian facilities on the Proposed Project site. There are no conflicts with County programs, plans, ordinances or policies regarding transportation and no mitigation is needed.

b. Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)? – Less than Significant.

The Proposed Project does not have the potential to create a significant environmental transportation impact per CEQA Guidelines Section 15064.3(b) because it is not a project with unique land uses or operating characteristics. The restoration of the site from farmed agriculture to wetland habitats would permanently reduce the overall operational traffic to the site. Currently, workers travel to the site to work the fields during the growing season. Future agricultural activities and restoration maintenance would still require periodic visits, but these visits would be less frequent than the current agricultural worker traffic to the site.

The County of Sonoma has not adopted a VMT significance threshold separate from the Office of Planning and Research's Technical Guidance. The Proposed Project's construction activities would not generate long-term net increases in vehicle miles traveled (VMT). During construction, there would be up to 12 construction workers, traveling to the site every work day for 4 months from the nearest city center of Santa Rosa, which is 8 miles away. Parking for worker vehicles and construction vehicles would be available on site in designated staging areas. This, in addition to other miscellaneous trips, would generate approximately 20,584 VMT

(Table 3.17-1). This amount of VMT would be temporary and occur during project construction and therefore not have a significant impact on the County's VMT total. This qualitative analysis is consistent with CEQA Guidelines Section 15064.3, subdivision (b) and the impact would be less than significant.

Table 3.17-1. Vehicle Miles Traveled (VMT) Due to Project-related Construction Activities.

Type of Trip	Workers for Project	Estimated Worker Trips per Work Day	Total Work Days	Trips related to Materials	Estimated distance (one-way)	Total VMT
Worker Commutes	12	24	102		8	19584
Miscellaneous Trips (Plants, Water Truck)				50	20	1000
Total VMT						**20584**

c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? – No Impact.

The Proposed Project would not include any sharp curves or involve any roads, except for an access path that would be used periodically for maintenance. No public roads occur in the project area. Therefore, there is no impact.

d. Result in inadequate emergency access? – Less than Significant with Mitigation Incorporated.

The Proposed Project would include a small and temporary number of construction workers, between 10 to 12 construction workers per day. Guerneville Road would be able to accommodate added traffic resulting from the Proposed Project as the increase would be minimal. Access onto the site would not change. Construction work would be limited to the Proposed Project site. Additionally, implementation of **Mitigation Measure TRA-1** would help to further minimize any impacts to emergency access. Therefore, the Proposed Project would not result in inadequate emergency access, and the impact would be less than significant.

Mitigation Measure TRA-1: Traffic Control Measures
Sonoma Water will require contractors, through project contract specifications, and maintenance staff to implement the following:

1. Construction and maintenance activities will be staged and conducted in a manner that maintains two-way traffic flow on public roadways in the Proposed Project vicinity of the work site to the maximum extent practicable. If unexpected temporary lane closures are necessary, they will be coordinated with the County of Sonoma at least seven days prior to commencement of closure and scheduled to occur outside of peak traffic hours (7:00 – 10:00 a.m. and 3:00 – 6:00 p.m.). Work will be

coordinated so that emergency vehicles and personnel shall be provided immediate access at all times.

3. Traffic control and safety precautions shall conform to the “California Manual on Uniform Traffic Control Devices” (latest edition), and applicable provisions of the County of Sonoma encroachment permits.
4. Traffic control and safety precautions shall provide safe passage for vehicular, bicyclist, and pedestrian traffic on Guerneville Road at all times.
5. At least seven days prior to commencement of work, notify residents along the Proposed Project roadways, in writing, that traffic flows will be subject to detours and/or delays, and that access to individual driveways may be disrupted during working hours. Notice will also be provided in writing to the property owner.
6. At least seven days prior to commencement of work, post notifications in the Proposed Project site to inform drivers of impending construction work and likely delays and detours.
7. Access for driveways and private roads will be maintained. If brief periods of construction would temporarily block access, property occupants would be notified, in writing, at least three days in advance of blocking property occupants’ driveways. Notice will also be provided in writing to the property owner.
8. Adequate off-street parking will be provided or designated public parking areas will be used for workers' personal vehicles and construction-related vehicles not in use through the maintenance period.

3.18 Tribal Cultural Resources

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:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. 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	☐	☐	☐	☒
b. 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.	☐	☒	☐	☐

Tribal Cultural Resources Setting

Public Resources Code section 21074 defines tribal cultural resources (TCR) as either of the following: (1) sites, features, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are either of the following: (A) included or determined to be eligible for inclusion in the California Register of Historical Resources; (B) included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; (2) 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 Section 5024.1. In applying the criteria set forth in subdivision (c), of Section 5024.1 for the purposes of this analysis, the lead agency shall consider the significance of the resource to a California Native American tribe.

As described in Section 3.5 Cultural Resources, seasonal flooding, shallow ground water, and clay-rich soils would have combined to make the Proposed Project area a less desirable location for habitation. However, tribal cultural resources could be present onsite. Geologic and

soils mapping data indicate that soils within the study area are associated with both Latest Holocene (Qhay) and Early to Late Pleistocene (Qoa) landforms (GEI Consultants 2022). These bimodally distributed landforms are considered to have high archaeological sensitivities. Late Pleistocene sediments have high surface sensitivities, while Latest Holocene areas have high buried sensitivities.

In addition, historical maps and aerial photographs indicate the study area, and surrounding land, is characterized by a relatively low-relief floodplain with predominantly fluvial basin topography, constrained by valley and hill geography on either side (i.e., east and west). The Laguna is well-known as a perennially inundated flood basin, and this major hydrologic feature would have occurred in the past. Because of this, locations immediately within the Laguna flood area would have been unlikely for long-term habitation, either historically or earlier.

Pre-contact settlements are known to have occurred within one mile of the study area (see Barrett 1908; Alshuth and Origer 2021), but these were on the opposite side (west side) of the Laguna; no such settlement is known to have occurred in the study area. However, short-term processing locations or occasional pass-through activities (e.g., walking or boating) may have occurred (GEI Consultants 2022).

In the modern era, the project area has been in cultivation, as well as much of the surrounding vicinity. There are no buildings or structures listed in, or eligible for listing, in the National Register of Historic Places or the California Register of Historical Places within the Proposed Project area. Based on the Origer and Alshuth (2021) and GEI Consultants (2022) archival research and field investigations of the project area, the potential for buried historical indicators within the Proposed Project area is low.

Native American Outreach

As described in Section 3.5 Cultural Resources, Sonoma Water obtained the list of tribes that are traditionally and culturally affiliated with the geographic area of the Proposed Project from the NAHC. On May 24, 2021, Sonoma Water notified the tribes on the list regarding the initiation of the Proposed Project in accordance with Assembly Bill AB 52 (AB52) and the CEQA Guidelines. Sonoma Water received a formal request from Federated Indians of Graton Rancheria (Tribe) for tribal consultation. Consultation with the Tribe included Sonoma Water's sharing of the cultural resources studies prepared for the Proposed Project, measures proposed for the project, and initial evaluation of potential for cultural and tribal cultural resources impacts.

Discussion of Potential Impacts

Impacts related to TCRs would be potentially significant if the Proposed Project would 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, or 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:

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:

a. 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)? – No Impact.

As described above, there are no buildings or structures listed in, or eligible for listing, in the National Register of Historic Places or the California Register of Historical Places within the Proposed Project area. Therefore, there would be no impact.

b. 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? – Less than Significant with Mitigation Incorporated.

As described in Section 3.5, Cultural Resources and above, there is potential to uncover previously unidentified tribal cultural resources during ground disturbance. The disturbance or damage of previously unidentified tribal cultural resources would be a potentially significant impact. Implementation of **Mitigation Measure TCR-1** and **Mitigation Measures CUL-1 (Inadvertent Discovery of Historical and Archaeological Resources and Worker Awareness Training)** and **CUL-2 (Inadvertent Discovery of Human Remains)** would minimize the potential for the project to adversely affect tribal cultural resources by ensuring that a tribal monitor is present during ground disturbing activities, providing worker awareness training, halting work and implementing recovery or preservation procedures, and would reduce the impact to less than significant.

Mitigation Measure TCR-1: Tribal Monitor During Ground-disturbing Activities
During ground-disturbing activities, representative from a culturally-affiliated tribe shall be present to monitor ground-disturbing activities.

3.19 Utilities and Service Systems

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

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Utilities and Service Systems if it would:

a. Require or result in the relocation or construction of new or expanded water, waste water treatment or storm water drainage, electric power, natural gas, or

telecommunications facilities, the construction or relocation of which could cause significant environmental effects? – No Impact.

The Proposed Project does not include any uses, features, or facilities that would require potable water, generate wastewater, electric power, natural gas, or telecommunications or relocations of such facilities. Therefore, there would be no impact.

b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? – Less than Significant.

The Proposed Project does not involve future development requiring water supply (see Section 3.19 a). The Proposed Project may require water for dust control during construction and maintenance activities and possibly irrigation of seeds and young plants associated with revegetation. Dust control and irrigation water uses would be infrequent, short-term, and provided by a water truck that is supplied from a nearby water hydrant or other source. Thus, this impact would be less than significant, and no mitigation would be required.

c. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments? – No Impact.

The Proposed Project does not involve development requiring wastewater treatment (see Section 3.19 a). Therefore, there would be no impact.

d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? – Less than Significant.

The Proposed Project would not create a permanent source of solid waste; however, there would be small amounts of debris and trash generated during construction and maintenance activities. Debris and trash would be regularly removed and disposed of at the Sonoma County Central Landfill or similar facility that is compliant with federal, state, and local regulations. The Proposed Project would not generate solid waste in excess of state or local standards or in excess of local infrastructure or otherwise impair attainment of solid waste goals. This impact is less than significant, and no mitigation is required.

e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? – Less than Significant.

The Proposed Project would generate a small amount of debris and trash during construction and maintenance activities and would comply with all federal, state, and local regulations related to solid waste. Therefore, there would be a less than significant impact.

3.20 Wildfire

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

Wildfire Setting

Recent fires in Sonoma County and throughout the State of California have heightened awareness of the risks that wildfires pose to people and structures in Sonoma County. On October 8, 2017, several wildfires affected the North Bay area. In Sonoma County, these fires eventually consumed more than 5,300 homes and businesses, burned over 110,000 acres, and killed 24 people (County of Sonoma Office of Recovery and Resiliency 2018).

Local Responsibility Area

All fire areas are mapped for risk as either being in a State Responsibility Area (SRA) or Local Responsibility Area (LRA). A local responsibility area is an area on which neither the state nor the federal government has any legal responsibility for providing fire protection. Local fire districts are responsible for fire suppression and prevention within LRAs. The Proposed Project site is located in a Local Responsibility Area (LRA) - Unincorporated. The Sonoma County

General Plan 2020 identifies the site's fire risk as moderate based on CalFIRE's mapping (Sonoma County 2020a). The Moderate Fire Hazard Severity Zone includes: wildland areas of low fire frequency supporting modest fires behavior, and developed/urbanized areas with a very high density of non-burnable surfaces and low vegetation cover that is highly fragmented and low in flammability.

Regulatory and Plans

California Fire Plan

The California Fire Plan addresses wildfire risk reduction at the statewide level and emphasizes community involvement, risk assessment, and proactive pre-fire management actions to reduce risk. The plan also describes California's fire risks as worsening due to a growing population in wildland areas, an accumulation of dry vegetation in the landscape due to large scale fire suppression over time, and increasing costs of firefighting services (CalFIRE 2018).

Sonoma County General Plan

The Public Safety Element of the Sonoma County General Plan 2020 (County of Sonoma, 2020a) identifies the following goal, objective, and policy that are applicable to the Proposed Project.

Goal PS-3: Prevent unnecessary exposure of people and property to risks of damage or injury from wildland and structural fires.

- Objective PS-3.3: Use the Sonoma County Hazard Mitigation Plan to help reduce damages from wildland fire hazards.
    - Policy PS-3f: Encourage strong enforcement of State requirements for fire safety by the California Department of Forestry and Fire Protection.

Sonoma County Community Wildfire Protection Plan

The Healthy Forests Restoration Act of 2003 established the Community Wildfire Protection Plan (CWPP) as a process for enhancing collaboration between stakeholders from federal, state and local agencies and community groups as they search for solutions to Wildland/Urban Interface (WUI) wildfire issues. There are three requirements for a CWPP: it is collaboratively developed with input from agencies and community members; it identifies and prioritizes treatment areas, mitigation strategies and treatments; and it recommends measures to reduce the ignitability of structures (Fire Safe Sonoma 2016). The Sonoma County CWPP addresses issues such as fire risk and barriers to safe evacuation within the SRA. The Proposed Project site overlaps the SRA.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Wildfire if it would be located in or near state responsibility areas or lands classified as very high fire hazard severity zones and would:

a. Substantially impair an adopted emergency response plan or emergency evacuation plan? – Less than Significant with Mitigation Incorporated.

During construction and maintenance activities there is no anticipated need for road closures. However, if unforeseen lane closures or traffic generated by project activities were to interfere with emergency response measures such that response times were extended, a significant impact would result. However, the Proposed Project would not result in inadequate emergency access, as described in Section 3.17d, Transportation. Implementation of Mitigation Measure TRA-1 during construction and maintenance activities would ensure emergency access is maintained. The Proposed Project would have a less-than-significant impact on emergency response or evacuation planning with mitigation incorporated.

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

The Proposed Project is located on flat terrain and would not impact existing slopes or winds in the area. The Proposed Project site is categorized as a Moderate Fire Hazard Severity Zone (County of Sonoma, 2020a). There are no occupants in the project area. However, project work crews would be onsite during temporary construction and maintenance activities. Conditions at the project site would not substantially change and exacerbate wildfire risks. Therefore, the exposure to temporary construction workers to pollutants and the spread of wildfire would be less than significant.

c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? – No Impact.

The Proposed Project would be a wetland restoration project that would not require the installation or maintenance of infrastructure that may exacerbate fire risk. Therefore, there would be no impact.

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

The Proposed Project's restoration activities would only require work crews onsite during temporary construction and maintenance. No structures would be built as part of the project and there are no occupants. The project activities would not result in an increased likelihood of wildfire. As such, the post-fire impact from slope instability, drainage changes, landslides, or flooding is very unlikely. Therefore, the impact would be less than significant.

3.21 Mandatory Findings of Significance

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

Discussion of Potential Impacts

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

Potentially significant impacts from the Proposed Project were identified for several resources. For more details, please refer to the impact discussions presented in Sections 3.3 (Air Quality), 3.4 (Biological Resources), 3.5 (Cultural Resources), 3.7 (Geology and Soils), 3.9 (Hazards and Hazardous Materials), 3.10 (Hydrology ad Water Quality), 3.13 (Noise), 3.17 (Transportation), and 3.18 (Tribal Cultural Resources). The Proposed Project includes mitigation measures that would minimize these impacts to a less than significant level. The Proposed Project with incorporation of the mitigation measures and mitigation measures would not have a significant environmental impact on any of the 20 factors listed on the Environmental Checklist and described in Sections 3.1 to 3.20.

b. Does the project have impacts that are individually limited, but cumulatively considerable? – Less than Significant.

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" (State 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 project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (State CEQA Guidelines Section 15355[b]).

The Laguna de Santa Rosa watershed has experienced loss of habitat integrity and ecosystem function due to many factors that have disturbed the natural setting of the watershed. As a result, the distribution and extent of certain types of land cover has changed substantially. There has also been further habitat loss, major changes in hydrology and sediment dynamics, and increased nutrient inputs resulting from urban and agricultural development that have impaired water quality. The Proposed Project would restore habitats and improve drainage. The project would have less than significant impacts during construction and maintenance, and in the long-term the Proposed Project would have beneficial effects to the Proposed Project site's habitat and water quality.

The Proposed Project's restoration would convert less than 0.02% of the total 576,727 acres of agricultural land in Sonoma County (California Department of Conservation, 2016). In addition, between 2016 and 2018 agricultural lands in Sonoma County slightly increased by 67 acres (0.01%)(California Department of Conservation 2022). Therefore, the Proposed Project would have a less than significant cumulatively considerable impact on agricultural land conversion in Sonoma County.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? – Less than Significant.

The Proposed Project consists of wetlands restoration along the Laguna de Santa Rosa. The Project actions would not result in the population increase in the Proposed Project vicinity. There may be temporary construction and maintenance-related impacts to humans associated

with air quality, geology and soils, hazards and hazardous materials, noise, and transportation that with implementation of mitigation measures would be less than significant. Please refer to the impact discussions in Section 3.1 through 3.20. Therefore, the Proposed Project would have a less than significant impact on humans.

4.0 Determination

On the basis of this initial evaluation:

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

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

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

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

☐ I find that although the Proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Proposed Project, nothing further is required.

Signature: Grant Davis Date: February 22, 2023

Grant Davis - General Manager

5.0 List of Preparers

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Appendix A: Notice of Availability / Notice of Intent to Adopt

404 Aviation Boulevard
Santa Rosa, CA 95403
Front Desk: 707-526-5370
www.sonomawater.org

Notice of Availability / Notice of Intent to Adopt Initial Study and Mitigated Negative Declaration for the LAGUNA-MARK WEST CREEK WATERSHED MASTER RESTORATION PLANNING PROJECT – HIGH PRIORITY PROJECT

Posted: February 22, 2023

Public Review Period: February 23, 2023, to March 27, 2023

The Sonoma County Water Agency (Sonoma Water) is the Lead Agency under the California Environmental Quality Act (CEQA) for the proposed Laguna-Mark West Creek Watershed Master Restoration Planning Project – High Priority Project (Proposed Project). Sonoma Water has prepared an Initial Study and Mitigated Negative Declaration (IS/MND) for the project in accordance with the California Environmental Quality Act (CEQA), the State CEQA Guidelines, and Sonoma Water's Procedures for Implementation of CEQA. This notice is to announce that the IS/MND is available for review by the public, agencies, and interested parties. Instructions for submitting comments on the document are included in this notice.

Project Location: The Proposed Project site encompasses approximately 119.43 acres along a 3,200-foot-long reach of the Laguna de Santa Rosa (Laguna) between the confluences of Santa Rosa and Mark West creeks, approximately five miles west of the City of Santa Rosa, in Sonoma County, California.

Project Description: The Proposed Project would restore a 3,200-foot-long reach of the Laguna and freshwater marsh, wet meadow, and riparian forest habitats on 119.43 acres along the Laguna. The Proposed Project site historically supported these habitat types prior to agricultural development. By realigning the Laguna channel to its historical path, the Proposed Project site would inundate more gradually during floods and drain slowly as floodwaters recede than under current conditions.

The restoration actions would consist of reestablishing the historic alignment of the Laguna, converting the existing engineered channel to a backwater, connecting two small east-west flowing tributary drainages to the new channel, and revegetation with native plants. The new channel and tributary connections would form a meandering stream configuration representative of the historic channel at the project site. The new channel and floodplain would be graded to inundate newly established wetland habitat types and to connect existing tributaries traversing the site. The Proposed Project would also include an access path to allow for trash and debris removal.

Materials: A copy of the IS/MND and supporting materials are available at the Sonoma Water administrative office at 404 Aviation Blvd., Santa Rosa, California. The IS/MND is available online at: https://www.sonomawater.org/environmental-documents

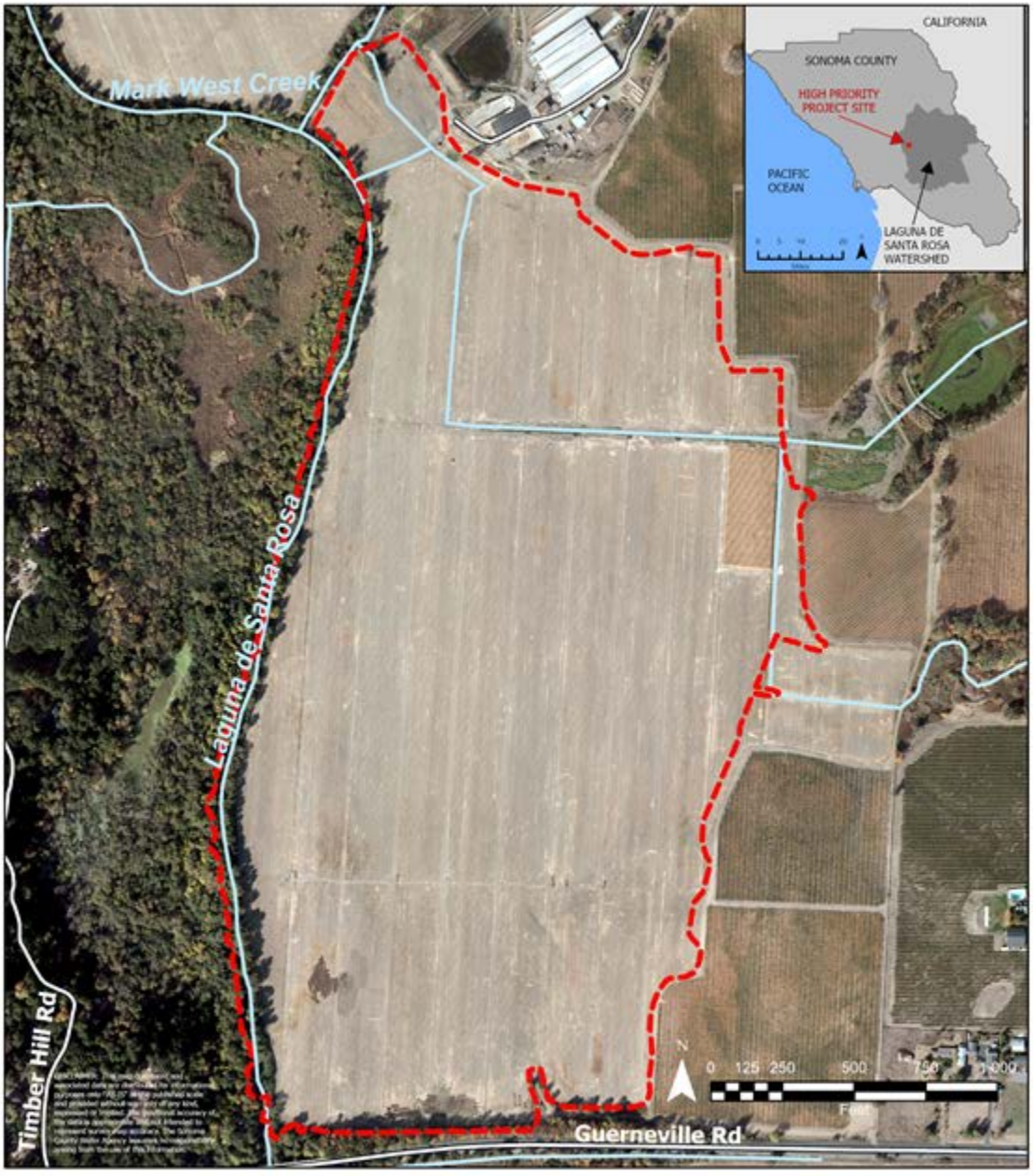
Public Review: The 30-day public review on the IS/MND runs from February 23, 2023 to

March 27, 2023. Please include a name, address, and email address of a contact person for all future correspondence on this subject. Written comments must be submitted no later than 5:00 pm on March 27, 2023. Written comments may be addressed to: David Cook, Senior Environmental Specialist, Sonoma Water, 404 Aviation Blvd., Santa Rosa, CA 95403-9019; or emailed to david.cook@scwa.ca.gov.

ADOPTION OF THE INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

Tentative Adoption Schedule: Following the close of the IS/MND public review period, Sonoma Water's Board of Directors will consider adoption of the IS/MND. The project is scheduled for consideration and adoption by Sonoma Water's Board of Directors at their regularly scheduled meeting beginning at **8:30 am on May 16, 2023.** Comments submitted during the IS/MND review period will be included in our report to the Board of Directors.

Laguna-Mark West Master Restoration Plan, High Priority Project Site



Project Area

Sonoma Water

Appendix B: Special Status Species

Table B-1: Special status plant species unlikely to occur in the project area due to habitat restrictions. These species have specialized habitat requirements, including dry uplands, serpentine soils, and exposed rock outcrops that do not occur in the project area. Also, onsite wetlands that could provide vernal pool or seasonal wetland habitats are unsuitable due to high disturbance from annual farming practices.

Scientific Name **(Common Name)**	**Status Federal, State, CNPS[1]**
Vernal Pool Dependent/ Farmed Wetland Unsuitable	
Blennosperma bakeri (Sonoma sunshine)	FE, CE, 1B.1
Calamagrostis bolanderi (Bolander's reed grass)	4.2
Calamagrostis crassiglumis (Thurber's reed grass)	2B.1
Campanula californica (swamp harebell)	1B.2
Downingia pusilla (Dwarf downingia)	2B.2
Lasthenia burkei (Burke's goldfields)	FE, CE, 1B.1
Legenere limosa (Legenere)	1B.1
Limnanthes vinculans (Sebastopol meadowfoam)	FE, CE, 1B.1
Navarretia leucocephala ssp. bakeri (Baker's navarretia)	1B.1
Ranunculus lobbii (Lobb's aquatic buttercup)	4.2
Rhynchospora alba (white beaked-rush)	2B.2
Rhynchospora californica (California beaked-rush)	1B.1
Rhynchospora capitellata (Brownish beaked-rush)	2B.2
Rhynchospora globularis (round-headed beaked-rush)	2B.1
Trifolium amoenum (two-fork clover, Showy Indian clover)	FE, 1B.1
Trifolium [depauperatum] hydrophilum (saline clover)	1B.2
Serpentine/Ultramafic	
Arctostaphyos stanfordiana ssp. *decumbens* (Rincon Ridge manzanita)	1B.1
Fritillaria liliacea (Fragrant fritillary)	1B.2
Mountainous/Rocky Xeric Uplands	
Arctostaphylos densiflora (Vine Hill manzanita)	1B.1
Ceanothus confuses (Rincon Ridge ceanothus)	1B.1
Ceanothus foliosus var. vineatus (Vine Hill ceanothus)	1B.1
Ceanothus gloriosus var. exaltatus (Glory brush)	4.3

Scientific Name (Common Name)	Status Federal, State, CNPS[1]
Ceanothus purpureus (Holly-leaved ceanothus)	1B.2
Clarkia imbricate (Vine Hill clarkia)	1B.1
Delphinium luteum (Golden larkspur)	1B.1
Lasthenia californica ssp. *bakeri* (Baker's goldfields)	1B.2
Viburnum ellipticum (Oval-leaved viburnum)	2B.3
Mesic Woodland/forest/grassland, Coastal	
Chorizanthe valida (Sonoma spineflower)	1B.1
Eriophorum gracile (Slender cottongrass)	4.3
Horkelia tenuiloba (thin-lobed horkelia)	1B.2
Hosackia gracilis (Harlequin lotus)	4.2
Iris longipetala (coast iris)	4.2
Trifolium amoenum (Two-fork clover, Showy Indian clover)	1B.1
Trifolium hydrophilum (Saline clover)	1B.2
Unique Habitat/Restricted Distribution	
Castilleja uliginosa (Pitkin Marsh paintbrush)	CE, 1A
Carex albida (White sedge)(taxonomic invalid species)	FE
Lilium pardalinum ssp. pitkinense (Pitkin Marsh lily)	FE, CE, 1B.1

[1]Status:
FE: Federally listed as Endangered
FT: Federally listed as Threatened
CE: State of California listed as Endangered
CT: State of California listed as Threatened
CR: State of California listed as Rare
California Native Plant Society (CNPS)
1A: Presumed extinct in California
1B: Rare, Threatened, or Endangered in CA and elsewhere
2: Rare, Threatened, or Endangered in CA, but more common elsewhere
4: Plants of limited distribution

Table B-2: Special status plant species with potential to occur in project area.

Scientific Name **(Common Name)**	**Status[1]**	**Habitat Preferences and Distribution**	**Flowering and Life Form**	**Habitat Suitability and Local Distribution[2]**	**Potential for Occurrence[3]**
Alopecurus aequalis var. *sonomensis* (Sonoma alopecurus)	FE 1B.1	Freshwater marshes, swamps, and riparian scrub.	May-July perennial herb	CNDDB record from Pitkin Marsh 1.7 miles west of the project area. Marginal and degraded habitat along Laguna edges in project area.	Moderate
Cuscuta obtusiflora var. glandulosa (Peruvian dodder)	2B.2	Freshwater marshes and swamps	July-Oct annual parasitic vine	CNDDB record non-specific next to Laguna from 1946. Species identified as "unsure." Very marginal habitat due to ongoing cultivation (farmed wetlands)	Low
Hemizonia congesta ssp. congesta (Congested-headed hayfield tarplant)	1B.2	Valley and foothill grassland, sometimes roadsides and fallow fields.	Apr-Nov	Very marginal habitat due to ongoing cultivation (farmed wetlands)	Low
Microseris paludosa (Marsh microseris)	1B.1	Coniferous forest, woodland, coastal scrub, and valley and foothill grassland.	April-June	CNDDB record southeast of Sebastopol near the Laguna. Very marginal habitat due to ongoing cultivation (farmed wetlands).	Low

[1] Legal Status

Federal listing: California listing:

FE Federally listed as Endangered SE State listed as Endangered

FT Federally listed as Threatened ST State listed as Threatened

SR State listed as Rare

CNPS listing (CEQA significance):

1B.1 Plants Rare, Threatened, or Endangered in California and elsewhere, seriously threatened in California.

1B.2 Plants Rare, Threatened, or Endangered in California and elsewhere, moderately threatened in California.

1B.3 Plants Rare, Threatened, or Endangered in California and elsewhere, not very threatened in California.

2B.1 Plants Rare, Threatened, or Endangered in California but more common elsewhere, seriously threatened in California.

2B.3 Plants Rare, Threatened, or Endangered in California but more common elsewhere, not very threatened in California.
3 Plants about which more information is needed, a review list.
3.1 Plants about which more information is needed, a review list, seriously threatened in California.
3.2 Plants about which more information is needed, a review list, moderately threatened in California.
4 Plants of limited distribution

[2] Local distribution determined by a search of the California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS).
[3] Potential for occurrence defined as:
Low: Few of the habitat components meeting the species requirements may be present in the project area and/or few occurrences in the region. In these instances, the species is not likely to be present.
Moderate: Some of the habitat components meeting the species requirements are possibly present in the project area and there are some occurrences in the region. The species has a moderate probability of occurring at a maintenance site.
High: All of the habitat components meeting the species requirements are likely present in the project area and there are several known occurrences in the vicinity. The species has a high probability of occurring in the project area.

Table B-3: Special status fish and wildlife species potentially occurring in project area.

Common & *Scientific Name*	Federal & State Listing[1]	Habitat Requirements	Habitat Suitability and Local Distribution[2]	Potential for Occurrence[3]
INVERTEBRATES				
California linderiella *Linderiella occidentalis*	--	Seasonal wetlands and vernal pools.	No CNDDB reports in the project vicinity. No Suitable habitat in the project area.	No Potential
California freshwater shrimp *Syncaris pacifica*	FE SE	Low gradient streams where riparian cover is moderate to high in Marin, Sonoma and Napa Counties. Utilizes pools and undercut banks with exposed roots out of direct streamflow.	Extirpated occurrence in Santa Rosa Creek. No suitable cover or overwintering habitat in project area.	No Potential
Monarch butterfly *Danaus plexipus*	FC	Migratory butterfly that overwinters in stands of large trees in southern California and Mexico. Forages in various lowland areas. Primary larval host plant is milkweed (*Asclepias* spp.)	Not know to overwinter in project area. May be visitor during annual migrations. Larval host plant not found onsite.	Low
FISH				
California Coastal Chinook Salmon *Oncorhynchus tshawytscha*	FT	Adults migrate upstream in fall. Spawns in cold, clear, freshwater rivers and large creeks with gravel/cobble substrate. Juveniles migrate downstream in spring and early summer to the ocean.	Infrequent migrant to Santa Rosa Creek via Laguna. No established spawning run. No suitable spawning habitat in project area.	Low
Central California Coast Coho Salmon *Oncorhynchus kisutch*	FE SE	Adults migrate upstream in early winter. Spawns in cold streams with riffles, loose, silt-free gravel substrate. Preferred rearing habitat consists of slow water pools or cool back water areas.	Known to spawn in Mark West Creek. No suitable spawning habitat in project area and summer conditions too warm for rearing. Coho may use the project area as winter refuge during high velocities in Mark West Creek	Moderate

Common & *Scientific Name*	Federal & State Listing[1]	Habitat Requirements	Habitat Suitability and Local Distribution[2]	Potential for Occurrence[3]
Central California Coast steelhead *Oncorhynchus mykiss irideus*	FT	Requires streams with cool water, pools and riffles, and moderate velocities. Adults spawn in clean gravel along moderate gradient creeks. Juveniles rear in creeks and estuaries before migrating to the ocean.	Several reports from Laguna tributaries and known to spawn in the headwaters of these creeks. Project area provides adult migration and juvenile rearing habitat (except summer when water temperatures are warm), and no spawning habitat.	Moderate
AMPHIBIANS				
California giant salamander *Dicamptodon ensatus*	SSC	Adults inhabit mountain forests. Breeding occurs in perennial streams with cool, clear water. Prefers moderate and high gradient creeks with pools and riffles.	Known to occur in headwater creeks that are tributaries to the Laguna; however, the low-gradient Laguna does not provide suitable habitat, including project area.	Low
California tiger salamander *Ambystoma californiense*	FE ST	Adults inhabit grasslands and oak savannahs. Adults breed in fishless vernal pools and seasonal wetlands. Locally endemic to Santa Rosa Plain and adjacent lowlands.	Project area outside of species range, Laguna floodplain excluded. No suitable habitat onsite. Project area outside of federal Critical Habitat designation.	No Potential
California red-legged frog *Rana draytonii*	FT SSC	Inhabits lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Often found in ponds, marshes, or slow-moving sections of creeks. Local breeding occurs in winter.	Nearest CNDDB record 9 miles east at Taylor Mountain Regional Park, and separated by the City of Santa Rosa. Project area outside of federal Critical Habitat designation. Aquatic habitats in project area unsuitable, primarily due to farming and an abundance of aquatic predators.	Low
REPTILES				
Green turtle *Chelonia mydas*	FT	Globally distributed, occurring generally in tropical and subtropical marine waters. Nests on sandy beaches. May occur in California coastal waters, but no breeding.	Marine species. No suitable habitat in project area.	No Potential

Common & *Scientific Name*	Federal & State Listing[1]	Habitat Requirements	Habitat Suitability and Local Distribution[2]	Potential for Occurrence[3]
Western pond turtle Actinemys *marmorata*	SSC	Freshwater turtle that inhabits permanent or nearly permanent bodies of water with low velocities. Habitats include creeks, rivers, ponds, lakes, ditches.	Several reports of this turtle from the Laguna. Aquatic habitats in the project area are suitable habitat.	High
BIRDS				
Tricolored blackbird *(Agelaius* tricolor)	CT	Nests in cattails, bulrush, and dense shrubby thickets and blackberries near or flooded by open water and foraging areas with abundant insect prey.	Nearest reported occurrence is from Sebastopol area approximately 3.5 miles south of the site. Riparian vegetation along Laguna may provide suitable habitat; however, onsite agricultural field unsuitable habitat. May infrequently forage in the project area.	Low
Northern spotted owl *Strix occidentalis caurina*	FT SSC	Moist, dense coniferous old-growth forests of redwood, Douglas fir, western red cedar and other conifers. Nest in cavities in trees.	No CNDDB occurrences in Project vicinity. No suitable nesting habitat in the project area, but may infrequently forage in the vicinity.	Low
White-tailed kite *Elanus leucurus*	FP	Forages in foothill and valley areas with scattered oaks. Nests in dense-topped trees.	May infrequently visit the project area.	Moderate
MAMMALS				
Pallid bat *Antrozous pallidus*	SSC	Inhabits rocky terrain in open areas in lowlands, foothills and mountainous areas near water throughout California. Roosts in caves, rock crevices, mines, hollow trees, buildings and bridges in arid regions.	Typical suitable roosting habitat is not present; nearest reported occurrences are near Forestville approximately 3 miles west. May infrequently forage in the project vicinity.	Low
Hoary bat Lasiurus cinereus	S4	Roosts in trees, preferably in coniferous forests. Forages over open areas and lakes.	Typical suitable roosting habitat is not present. May infrequently forage in the project vicinity.	Low
American badger *Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils with abundant prey.	Nearest reported occurrence is 3.3 miles southeast of the site. No suitable habitat in the project area due to flooding and lack of prey species;	Low

[1]Legal Status

Federal listing:		California listing:	
FE	Federally listed as Endangered	SE	State listed as Endangered
FT	Federally listed as Threatened	ST	State listed as Threatened
		SR	State listed as Rare
		SC	State Candidate for listing
		SSC	Species of Special Concern
		SA	Special Animal
		FP	Fully Protected
		WL	Watch List

[2]Local distribution determined by a search of the California Natural Diversity Database (CNDDB) and other resources.

[3]Potential for occurrence defined as:

No Potential: Habitat components of a species are not known to occur in along creeks and riparian areas in the Project area. Habitats outside of the Project area include: marine, salt and brackish marsh, salt ponds, vernal pools, coniferous forest, and cismontane woodland.

Low: Few of the habitat components meeting the species requirements may be present in the Project area and/or few occurrences in the region. In these instances, the species is not likely to be present.

Moderate: Some of the habitat components meeting the species requirements are possibly present in the Project area and there are some occurrences in the region. The species has a moderate probability of occurring in the Project area.

High: All of the habitat components meeting the species requirements are likely present in the Project area and there are several known occurrences on-site or nearby. The species has a high probability of occurring in the Proje`ct area.

Appendix C: Air Quality and Greenhouse Gases

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Laguna de Santa Rosa

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.69	8.87	2.22	330.41	0.41	330.00	68.81	0.17	68.64	0.03	3,242.49	0.07	0.18	3,296.62
Grading/Excavation	0.56	7.25	0.61	330.31	0.31	330.00	68.77	0.13	68.64	0.02	2,131.06	0.06	0.06	2,149.39
Drainage/Utilities/Sub-Grade	0.56	7.25	0.61	330.31	0.31	330.00	68.77	0.13	68.64	0.02	2,131.06	0.06	0.06	2,149.39
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.69	8.87	2.22	330.41	0.41	330.00	68.81	0.17	68.64	0.03	3,242.49	0.07	0.18	3,296.62
Total (tons/construction project)	0.03	0.34	0.04	14.53	0.01	14.52	3.03	0.01	3.02	0.00	105.99	0.00	0.00	107.19

Notes:

Project Start Year ->	2023
Project Length (months) ->	6
Total Project Area (acres) ->	130
Maximum Area Disturbed/Day (acres) ->	33
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	88	0	180	0	3,600	0
Grading/Excavation	0	0	0	0	3,000	0
Drainage/Utilities/Sub-Grade	0	0	0	0	3,000	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Laguna de Santa Rosa

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.10	0.02	3.63	0.00	3.63	0.76	0.00	0.76	0.00	35.67	0.00	0.00	32.90
Grading/Excavation	0.01	0.08	0.01	3.63	0.00	3.63	0.76	0.00	0.76	0.00	23.44	0.00	0.00	21.45
Drainage/Utilities/Sub-Grade	0.01	0.16	0.01	7.27	0.01	7.26	1.51	0.00	1.51	0.00	46.88	0.00	0.00	42.90
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.01	0.16	0.02	7.27	0.01	7.26	1.51	0.00	1.51	0.00	46.88	0.00	0.00	42.90
Total (tons/construction project)	0.03	0.34	0.04	14.53	0.01	14.52	3.03	0.01	3.02	0.00	105.99	0.00	0.00	97.24

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Laguna de Santa Rosa	
Construction Start Year	2023	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	6.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.80	miles
Total Project Area	130.00	acres
Maximum Area Disturbed/Day	33.00	acres
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	10.00		88.00
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	1.00	0.60		1/1/2023
Grading/Excavation	1.00	2.40		2/1/2023
Drainage/Utilities/Sub-Grade	2.00	2.10		3/4/2023
Paving		0.90		5/4/2023
Totals (Months)		5		

Please note: You have entered a different number of months than the project length shown in cell D16.
Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing	20.00			9	180.00
Miles/round trip: Grading/Excavation	40.00			0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade	40.00			0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Grading/Excavation (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Paving (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.02	0.17	1.49	0.05	0.02	0.01	685.23	0.00	0.11	717.34
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.02	0.00	0.00	0.00	7.54	0.00	0.00	7.89
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.02	0.00	0.00	0.00	7.54	0.00	0.00	7.89

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Grading/Excavation (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Paving (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker			
User Input	Commute Default Values	Default Values		
Miles/ one-way trip	15		Calculated	Calculated
One-way trips/day	20		Daily Trips	Daily VMT
No. of employees: Grubbing/Land Clearing	12		240	3,600.00
No. of employees: Grading/Excavation	10		200	3,000.00
No. of employees: Drainage/Utilities/Sub-Grade	10		200	3,000.00
No. of employees: Paving			0	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.02	0.91	0.07	0.05	0.02	0.00	317.66	0.00	0.01	319.68
Grading/Excavation (grams/mile)	0.02	0.91	0.07	0.05	0.02	0.00	317.66	0.00	0.01	319.68
Draining/Utilities/Sub-Grade (grams/mile)	0.02	0.91	0.07	0.05	0.02	0.00	317.66	0.00	0.01	319.68
Paving (grams/mile)	0.02	0.91	0.07	0.05	0.02	0.00	317.66	0.00	0.01	319.68
Grubbing/Land Clearing (grams/trip)	1.04	2.75	0.29	0.00	0.00	0.00	68.26	0.07	0.03	79.50
Grading/Excavation (grams/trip)	1.04	2.75	0.29	0.00	0.00	0.00	68.26	0.07	0.03	79.50
Draining/Utilities/Sub-Grade (grams/trip)	1.04	2.75	0.29	0.00	0.00	0.00	68.26	0.07	0.03	79.50
Paving (grams/trip)	1.04	2.75	0.29	0.00	0.00	0.00	68.26	0.07	0.03	79.50
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.67	8.70	0.73	0.37	0.15	0.03	2,557.27	0.07	0.07	2,579.27
Tons per const. Period - Grubbing/Land Clearing	0.01	0.10	0.01	0.00	0.00	0.00	28.13	0.00	0.00	28.37
Pounds per day - Grading/Excavation	0.56	7.25	0.61	0.31	0.13	0.02	2,131.06	0.06	0.06	2,149.39
Tons per const. Period - Grading/Excavation	0.01	0.08	0.01	0.00	0.00	0.00	23.44	0.00	0.00	23.64
Pounds per day - Drainage/Utilities/Sub-Grade	0.56	7.25	0.61	0.31	0.13	0.02	2,131.06	0.06	0.06	2,149.39
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.16	0.01	0.01	0.00	0.00	46.88	0.00	0.00	47.29
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.03	0.33	0.03	0.01	0.01	0.00	98.45	0.00	0.00	99.30

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust								0.00
Grading/Excavation - Exhaust								0.00
Drainage/Utilities/Subgrade								0.00
Paving								0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Grading/Excavation (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Paving (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing						
Fugitive Dust - Grading/Excavation						
Fugitive Dust - Drainage/Utilities/Subgrade						

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing	tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grading/Excavation	pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Drainage/Utilities/Sub-Grade	pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Paving		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions all Phases (tons per construction period) =>			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET