

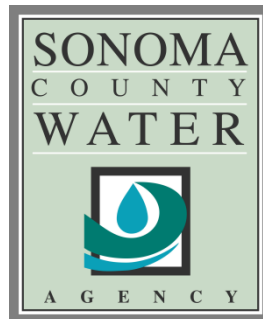
# Green Valley Creek High Flow Channel Project

## Initial Study and Negative Declaration of Environmental Impact

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Lead Agency:

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## **Suggested Reference**

Sonoma County Water Agency. 2018. Green Valley Creek High Flow Channel Project Draft Initial Study and Negative Declaration of Environmental Impact. June 2018.

## **American Disabilities Act Compliance**

This Draft Initial Study and Negative Declaration of Environmental Impact for the Sonoma County Water Agency's proposed Green Valley Creek High Flow Channel Project has been prepared to be compliant 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.

This disclaimer is provided to advise that portions of the document, including the figures, charts, and graphics included in the document, are non-convertible material, and could not reasonably be adjusted to be fully compliant with ADA regulations. For assistance with this data or information, please contact the Water Agency, at (707) 526- 5370 and reference the Draft Initial Study and Negative Declaration of Environmental Impact for the Sonoma County Water Agency's Green Valley Creek High Flow Channel Project, dated June 2018.

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## 1.0 Introduction

The Sonoma County Water Agency (Water Agency) is proposing the Green Valley Creek High Flow Channel Project (Proposed Project) to reduce flooding along a section of Green Valley Road. The Water Agency prepared this Initial Study and Negative Declaration for the Proposed Project. The Water Agency is the lead agency in accordance with the California Environmental Quality Act (CEQA). An Initial Study is a preliminary analysis of a project's potential environmental impacts used to determine whether a Negative Declaration or an Environmental Impact Report will be prepared. This document is intended to provide a clear understanding of the environmental impacts associated with the construction, maintenance, and operation of the Proposed Project for decision-makers, responsible and trustee agencies under CEQA, and the public. If an Initial Study identifies no potentially significant impacts, a Negative Declaration may be prepared. Also, if an Initial Study identifies potentially significant impacts, but the project is modified or revised to clearly mitigate the impacts, a Mitigated Negative Declaration may be prepared. If an Initial Study concludes that a project may have a significant effect on the environment, an Environmental Impact Report should be prepared.

A section of Green Valley Creek adjacent to Green Valley Road, located in western Sonoma County, frequently floods during winter rainfall that causes road hazards and closures, and damage to adjacent properties. Flooding results in fish and aquatic wildlife, including special status species, strandings in the adjacent vineyard once flood waters recede. Much of the flooding is a result of sedimentation of the existing natural creek channel that has directed waters toward the road and adjacent vineyard. To reduce flood risk the Water Agency proposes a flood control project that would decrease the potential of storm waters overtopping the creek banks and flooding roads and adjacent properties. The Proposed Project is a sediment removal project that would excavate a high flow channel adjacent to the natural channel to increase the flood capacity of the creek.

The Water Agency 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 the Water Agency's Board of Directors. The Water Agency'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 Water Agency's facilities), and the treatment and disposal of wastewater.

### 1.1 Purpose of Initial Study

This IS/ND was prepared pursuant to the requirements of the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000 et. seq.), the State

CEQA Guidelines (Code of Regulations, Title 14, Division 6, Chapter 3), and the Water Agency's Procedures for the Implementation of CEQA. An Initial Study is a preliminary analysis of a project's potential environmental impacts used to determine whether a Negative Declaration or an Environmental Impact Report will be prepared. This document is intended to provide a clear understanding of the environmental impacts associated with the construction, maintenance, and operation of the Proposed Project for decision-makers, responsible and trustee agencies under CEQA, and the public. If an Initial Study identifies no potentially significant impacts, a Negative Declaration may be prepared. Also, if an Initial Study identifies potentially significant impacts, but the project is modified or revised to clearly mitigate the impacts, a Mitigated Negative Declaration may be prepared. If an Initial Study concludes that a project may have a significant effect on the environment, an Environmental Impact Report should be prepared.

The Board of Directors, as the lead agency under CEQA, will consider the potential environmental impacts of the Proposed Project when it considers whether to approve the Proposed Project. This IS/ND is an informational document to be used in the decision-making process. After completion of the public review period for this document, this IS/ND, along with a summary of comments submitted and the Water Agency's response to those comments, will be brought before the Board of Directors for their consideration.

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

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- 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 and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems
- Mandatory Findings of Significance

The Proposed Project incorporates measures to ensure there would be no significant adverse impacts on the environment.

## 1.2 Project Background

Green Valley Creek has a long history of accumulation of sediment and flooding of adjacent properties in the project area during the winter rainy season (Figure 1). Local landowners used to remove sediment from the Green Valley Creek channel to reduce winter flooding. This practice ceased approximately 10 years ago and sediments have been slowly aggrading, which has increased the frequency of flooding. There is also evidence that levees were constructed historically to prevent flooding of agricultural lands downstream of the Green Valley Road bridge.

The most recent flood response action was the Emergency Repair of Green Valley Creek Flood Project implemented by the Water Agency during winter 2017. According to Sonoma County Transportation and Public Works, flooding over Green Valley Road affects an average daily traffic of 1,733 vehicles (SCDTPW 2018). During 2017 flooding resulted in 23 days of road closures and detours that increased travel time by approximately 18 minutes. The purpose of this project was to provide immediate and temporary relief from flood waters crossing Green Valley Road and into an adjacent vineyard (Figure 1). The emergency project consisted of excavating 500 feet of side channel (i.e., active channel) between the road and the natural creek channel in an effort to keep the creek within its current floodplain (Figure 2).

High winter flow events of 2016-2017 exacerbated the deposition and flooding to the point where most of the creek flow crossed the road, passing through approximately 2,000 feet of vineyard before draining into Atascadero Creek, a tributary of Green Valley Creek. In 2013, a channel cross section in the project area showed a thalweg (deepest point along a stream) a little over four feet lower than the Green Valley Road surface. By 2016, the creek had aggraded almost two feet. Then in winter 2017 the channel thalweg was almost level with the road. This resulted in most of the creek flow crossing the road and stranding aquatic species in the vineyard. To redirect floodwaters back into the creek a channel adjacent to Green Valley Road was deepened. An excavator accessed the channel from the adjacent road, worked from the top of bank, and placed sediment directly into dump trucks for disposal. The emergency work avoided the natural creek channel, located on the opposite bank, and associated mature riparian trees. Species rescued from the vineyard and construction area included 454 juvenile coho salmon (*Oncorhynchus kisutch*) and steelhead (*Oncorhynchus mykiss*), 1,151 other fish, and 104 California freshwater shrimp (*Syncaris pacifica*, CFWS).



**Figure 1: Flooding over Green Valley Road (February 7-8, 2017).**



Most of Green Valley Creek flowed over Green Valley Road, causing road closures, erosion, and fish and wildlife strandings in the adjacent vineyard.

**Figure 2: Active Channel Emergency Excavation (Winter 2017).**

2A) Active channel prior to excavation on March 2. Green Valley Road pictured photo right.



2B) Temporary sandbag and plastic cofferdam installed at upstream end of active channel to dewater work area, March 7.



2C) Excavation of 16-foot wide channel, Himalayan blackberry vegetation retained on east side to maintain aquatic cover, March 7.



2D) Post-construction, retained overhanging blackberry and exposed gravel shoreline provide a range of microhabitats, June 14.



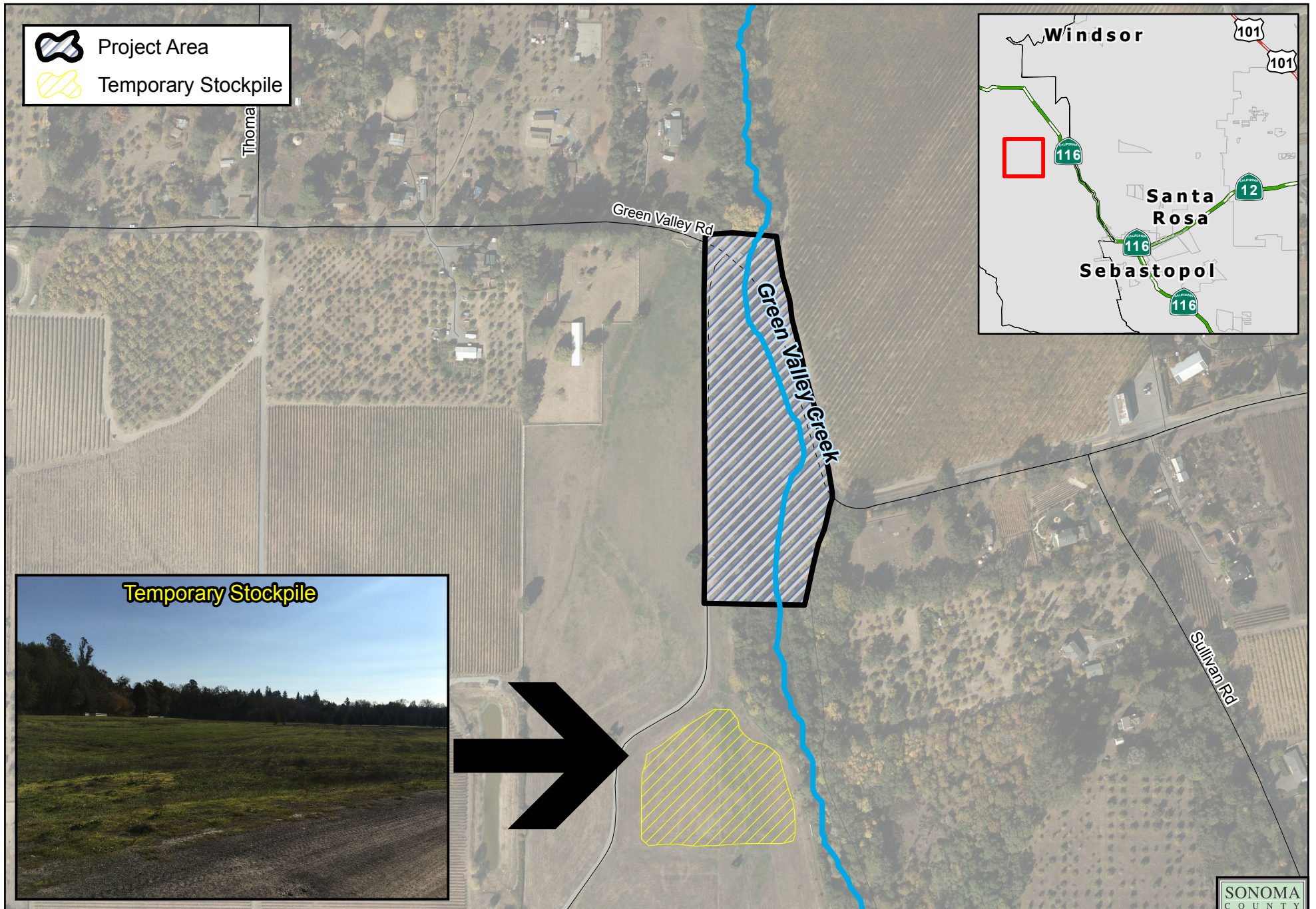
## **2.0 Project Location and Description**

### **2.1 Project Location**

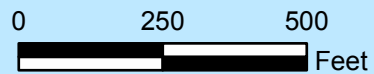
Green Valley Creek is a tributary of the Russian River and is in western Sonoma County near the City of Sebastopol. The project area is bordered by Green Valley Road and vineyards to the east and agricultural lands on the west (Figure 3).

### **2.2 Project Purpose and Need**

Green Valley Creek overtops Green Valley Road resulting in hazardous driving conditions, damage to the roadway and adjacent farmland, and fish and wildlife strandings. Flooding has increased in magnitude, frequency, and duration from recent accumulation of sediment. The purpose of this project is to lessen recurrent flooding of Green Valley Road and adjacent property by excavating and maintaining channels to accommodate storm flows. Although there would be temporary disturbance to fish and wildlife and their habitats, there are long-term benefits including increased aquatic habitat, riparian restoration, fewer strandings, and reduced degradation of habitats downstream from sedimentation. A summary of project benefits and disturbances is provided in Table 1 below.



**Figure 3. Proposed Project Location and Vicinity.**



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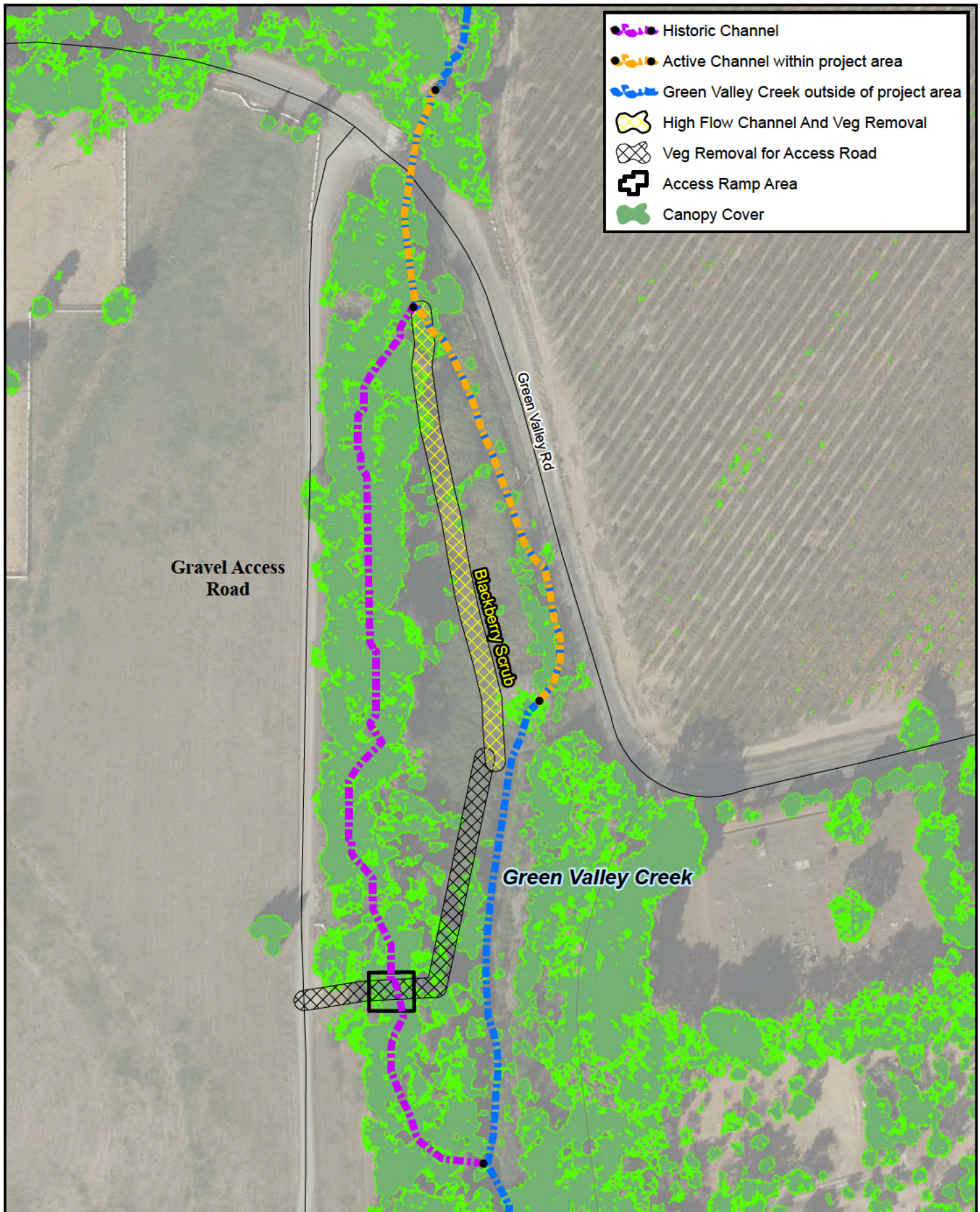
**Table 1: Summary of Project benefits and disturbances.**

<b>Benefits</b>
Reduce vineyard strandings of fish and CFWS during flood events.
Increase aquatic habitat along excavated high flow channel.
Reduce sedimentation and partial fish barrier along active channel.
Remove invasive blackberry vegetation along elevated sediment bar and historic channel.
Provide open canopy shoreline foraging habitat for foothill yellow-legged frog (FYLF) along high flow channel and active channel.
Reduce sedimentation of aquatic habitats downstream, including pool habitat used by endangered fish and invertebrates.
<b>Disturbance Avoidance and Minimization</b>
Construct during dry season and isolate work from flowing water.
Maintain overhanging blackberry along active and high flow channel for CFWS habitat.
Relocate fish and wildlife outside of construction areas.
Restrict work area, including no heavy equipment along historic channel, except at access crossing.
<b>Disturbance</b>
Temporary vegetation disturbance along access route, mainly Himalayan blackberry.
Temporary fill at historic channel crossing.
Temporary water turbidity at active channel during sediment removal maintenance.

## 2.3 Project Description

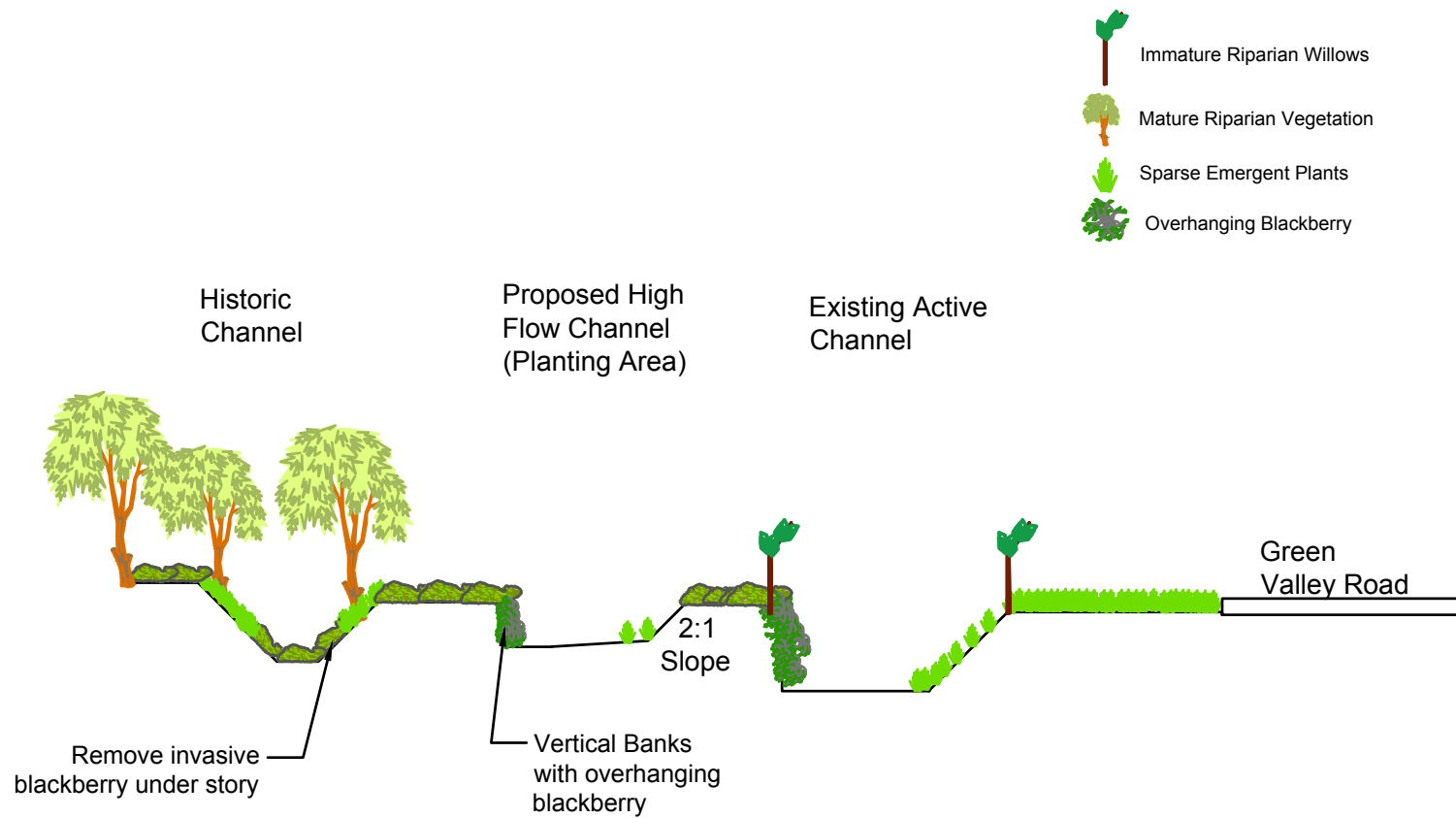
The Proposed Project's several actions are intended to improve flood capacity within this section of Green Valley Creek. The project is comprised of five components: 1) removing vegetation within the work area, consisting of removal of existing understory vegetation for an access road, in the area of the high flow channel, and along the historic channel for flood conveyance; 2) placing temporary fill for an access road across the historic channel; 3) excavating the high flow channel and removing sediment to maintain the active channel; 4) annual project maintenance for the purpose of maintaining flood capacity by removing sediment in the high flow and active channels and vegetation management for a period of five years; and 5) revegetating with native plants. Appendix A includes specific design plans for the Proposed Project. A high flow channel would be excavated within an existing sediment bar located between an historic channel and the active channel, which was excavated during the emergency project in winter 2017 (Figures 4 and 5). The sediment bar, which is the proposed location for the high flow channel, is elevated above the ordinary high water mark and reduces the creek's capacity to convey flood waters. Also, storm flow capacity is impaired by a dense thicket of nonnative Himalayan blackberry (*Rubus armeniacus*) that covers the sediment bar and channel banks. Blackberry on the sediment bar would be removed within the proposed high flow channel.

Table 2 lists several Best Management Practices (BMP) that are incorporated into the project to avoid and minimize disturbance to sensitive habitats and special status species known to occur in Green Valley Creek (see Section 3.5). Project components are described in detail below. Estimated project impacts to wetlands and waters by project component and activity is listed in Table 3.



**Figure 4. Proposed Project Area, Access and Vegetation Clearing.**





**Figure 5: Cross-section of Proposed Project Area.**

NOTE: Diagram is not to scale

**Table 2: Best Management Practices to be Implemented for the Proposed Project.**

<b>BMP ID</b>	<b>Name</b>	<b>BMP</b>
<b>Air Quality Protection</b>		
AQ-1	Dust Management	<ol style="list-style-type: none"> <li>1. Water all active maintenance areas as necessary to reduce dust emissions. In dry areas, this may be twice daily or more, while in already wet areas, no watering may be needed.</li> <li>2. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain freeboard as necessary to prevent transported material from blowing from the trucks.</li> <li>3. Sweep as necessary (with water sweepers or dry sweepers, as appropriate) all paved access roads, parking areas and staging areas at construction sites.</li> <li>4. Sweep streets as necessary (with water sweepers or dry sweepers, as appropriate) if visible soil material is carried onto adjacent public streets.</li> </ol>
<b>Biological Resources Protection</b>		
General Measures		
BR-1	Area of Disturbance	<ol style="list-style-type: none"> <li>1. Activities will avoid damage to or loss of native vegetation to the maximum extent feasible.</li> <li>2. Soil disturbance shall not exceed the minimum area necessary to complete the operations as described.</li> </ol>
BR-2	Pre-Maintenance Educational Training	<ol style="list-style-type: none"> <li>1. At the beginning construction activities, all personnel will participate in an educational training session conducted by a qualified biologist.<sup>1</sup> This training will include instruction on how to identify bird nests, recognize special status</li> </ol>

<sup>1</sup>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. The Water Agency may also utilize appropriately experienced and/or trained environmental staff. Resumes will be submitted to California Department of Fish and Wildlife, U.S. Fish and Wildlife Service and/or National Marine Fisheries Service for approval prior to commencement of biological surveys.

		<p>species that may occur in the work areas, and the appropriate protocol if any nests or listed species are found during project implementation.</p> <p>2. Personnel who miss the first training session must participate in a make-up session before conducting construction activities.</p>
BR-3	Common Fish and Wildlife	<ol style="list-style-type: none"> <li>1. A pre-construction survey for common fish and wildlife will be conducted within 24 hours ahead of maintenance activities. The bridge and riparian trees will be surveyed for bats. Although construction activities will occur mainly in dry areas, fish, amphibian, and reptile species found within the construction area will be relocated to suitable habitat.</li> <li>2. If needed, aquatic species will be excluded from the work area by blocking the stream around the work area with fine-meshed net or screens. The bottom of the screens will be completely secured to the channel bed. Screens will be checked periodically and cleaned of debris to permit free flow of water.</li> <li>3. If avoidance is not feasible, the most efficient means for capturing fish and aquatic wildlife will be determined and implemented. Complex stream habitat generally requires the use of electrofishing equipment, whereas in deep pools, fish may be captured by seining or dipnetting. Ample time will be scheduled to allow for a reasonable fish removal effort to be conducted.</li> <li>4. All captured fish will be allowed to recover from electrofishing before being returned to the stream.</li> <li>5. Prior to capturing fish and/or amphibians, the most appropriate release location(s) will be identified and used. The following issues will be considered when selecting release site(s): <ul style="list-style-type: none"> <li>• proximity to the work area;</li> <li>• similar water temperature as capture location;</li> <li>• ample habitat availability prior to release of captured fish; and</li> <li>• low likelihood of animals reentering work site.</li> </ul> </li> </ol>

BR-4	Nesting Migratory Bird and Raptor Pre-maintenance Surveys	<ol style="list-style-type: none"> <li>1. Construction activities will take place outside the migratory bird and raptor nesting period for most birds (February 15 through August 15).</li> <li>2. If construction activities must be scheduled during the nesting season, a qualified wildlife biologist, familiar with the species and habitats in the area, will conduct pre- construction surveys for raptors and nesting birds within suitable habitat. The surveys should be conducted within one week before initiation of maintenance activities within those habitats. If no active nests are detected during surveys, activities may proceed. Vegetation removal activities will be conducted under the guidance of a biologist. If active nests are detected then measure 3, below, would be implemented.</li> <li>3. If active nests are identified in the work area, non-disturbance buffers shall be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover and species' tolerance to disturbance. Buffer size shall be determined in cooperation with the CDFW. If active nests are found within 300 feet of the 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 maintenance activity is resulting in nest disturbance, work shall cease immediately and CDFW shall be contacted. Buffers will be developed through consultation with CDFW. Buffers will remain in place until biologists determine that the young have successfully fledged or nests have been otherwise abandoned.</li> </ol>
BR-5	On-Call Wildlife Biologist	A qualified biologist will be on-call in Sonoma County and available to visit a project site at any point during maintenance activities in the event a special status species is encountered.
BR-6	Special Status Plants	<ol style="list-style-type: none"> <li>1. A qualified botanist will conduct appropriately timed focused botanical surveys of the project site for special status plants.</li> <li>2. Special status plant species near the project site will be protected from temporary disturbance by installing environmentally sensitive area fencing (orange construction barrier fencing) around special status plant species populations. Protective fencing will be installed under the direction of the botanist as necessary to protect the plant and its habitat; where feasible, the</li> </ol>

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environmentally sensitive area fencing will be installed at least 50 ft. from the edge of the population. Where special status plant populations are located in wetlands, silt fencing will also be installed.

3. Vegetation removal in sensitive plant areas will be conducted under the guidance of the botanist. These activities should be timed following the blooming periods of potentially occurring listed species, after the month of June.

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BR-7      Threatened and  
             Endangered Fish and  
             Wildlife

1. All project activities shall comply with the terms and conditions of the Project's Biological Opinion, Incidental Take Permit, Water Certification, or other authorizing document issued by USFWS, NMFS, CDFW, or other resource agency. This measure applies to all ground disturbance activities, species capture, and relocation. Permit special conditions for the project will be overseen by a qualified biologist. Protected species include: California freshwater shrimp, steelhead, Chinook salmon, coho salmon, foothill yellow-legged frog, California red-legged frog, western pond turtle, and several bat species that are present or assumed present in the project area.
  2. If approved by resource agencies, sensitive aquatic species will be relocated outside of the construction area as described in BR-3.
  3. If evidence of bats are found in the construction area (e.g., guano below bridge crevices) an approved bat biologist will evaluate the project area and measures to avoid and minimize disturbance will be implemented in coordination with CDFW.
  4. A qualified biologist will inspect the area daily before the start of work and will be present during ground disturbance activities in sensitive habitats. If appropriate, exclusionary fencing will be installed.
  5. The qualified biologists will have the authority to stop work if a protected species is encountered until such a time as the animal may be moved to an area outside of the project area.
  6. In the event that a protected species is encountered within the work area the USFWS Sacramento Field Office (wildlife) and NMFS (anadromous fish) will be contacted within 48 hours.
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## Cultural Resources Protection

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|------|--|---|
| CR-1 | Previously Undiscovered Cultural Resources | <ol style="list-style-type: none"><li>1. The Water Agency will implement the following measures regarding the discovery of cultural resources, including Native American cultural resources and items of historical, archaeological, or paleontological interest. Water Agency staff onsite will be notified of the possibility of encountering cultural resources during project construction.<ol style="list-style-type: none"><li>a. Prior to initiation of ground-disturbing activities, the Water Agency shall arrange for maintenance staff to receive training about the kinds of cultural materials that could be present at the project site and the protocols to be followed should any such materials be uncovered during construction. Training shall be conducted by 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). Training may be required during different phases of construction to educate new personnel.</li></ol></li><li>2. The Water Agency will provide that if discovery is made of items of historical, archaeological, cultural or paleontological interest, the crews will immediately cease all work activities in the area of discovery. Historical, archaeological, cultural and paleontological 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, human bones, and fossils.<ol style="list-style-type: none"><li>a. In the event of unanticipated discovery of archaeological materials occurs during construction, the Water Agency 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.</li><li>b. In the case of an unanticipated archaeological discovery, if it is determined that the find is potentially eligible for listing in the California</li></ol></li></ol> |
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Register of Historical Resources and/or National Register of Historic Places, and the site cannot be avoided, the Water Agency shall provide a research design and excavation plan, prepared by a qualified archaeologist, outlining recovery of the resource, analysis, and reporting of the find. The research design and excavation plan shall be approved by the Water Agency. Implementation of the research design and excavation plan shall be conducted prior to work being resumed.

3. The Water Agency will 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 crews shall halt work in the vicinity of the find, and contact the Sonoma County Coroner in accordance with Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5. 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. Work shall cease in the immediate area until the recommendations of the appropriate MLD are concluded.

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### **General Impact Avoidance and Minimization**

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|-------|-------------|--|
| GEN-1 | Work Window | <ol style="list-style-type: none"><li>1. All ground-disturbing maintenance activities occurring in the project area will take place during the low-flow period, between June 15 and October 31.</li><li>2. Prior to the first significant rainfall, exposed soils in will be stabilized via hydroseeding or with erosion control fabric/blankets. Significant rainfall is defined as a forecast of 50% or greater chance of precipitation.</li></ol> |
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3. Work on the upper banks of the channels (e.g., erosion control and plantings) may be conducted year round. Ground disturbing activities will only be conducted during periods of dry weather.

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GEN-2      Staging and Stockpiling  
of Materials

1. Staging will occur on 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.
2. All project-related items including equipment, stockpiled material, temporary erosion control treatments, and trash, will be removed within 72 hours of project completion.
3. As necessary, to prevent sediment-laden water from being released back into the channel during transport of spoils to 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. If appropriate, and only within the active work area where the sediment is being loaded into the trucks, trucks may drain excess water by slightly tilting the loads and allowing the water to drain out through the applied filter.
4. No runoff from the staging areas may be allowed to enter waters of the State, including the creek channel 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 on-site 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.
5. During dry season, no stockpiled soils shall remain exposed and unworked for more than 30 days. During wet season, no stockpiled soils shall remain exposed, unless surrounded by properly installed and maintained silt fencing or other means of erosion control.
6. All spoils will be disposed in an approved location.

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**Good Neighbor Policies**

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GN-1	Work Site Housekeeping	<ol style="list-style-type: none"> <li>1. The Water Agency will maintain the work site in a neat and orderly condition, and will leave the site in a neat, clean, and orderly condition when work is complete. Paved access roads will be swept and cleared of any residual vegetation or dirt resulting from the maintenance activity.</li> <li>2. Materials or equipment left on the site overnight will be stored as inconspicuously as possible, and will be neatly arranged.</li> </ol>
GN-2	Noise Control	<ol style="list-style-type: none"> <li>1. Work will be limited to normal business hours (8:00 a.m.–5:00 p.m.). Routine activities in residential areas will not occur on Saturdays, Sundays, or the Water Agency observed state holidays except during emergencies, or with approval by the local jurisdiction and advance notification of surrounding residents.</li> <li>2. The Water Agency will ensure that power equipment (vehicles, heavy equipment, and hand equipment such as chainsaws) is equipped with original 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.</li> </ol>
GN-3	Traffic Flow, Pedestrians, and Safety Measures	<ol style="list-style-type: none"> <li>1. Work will be staged and conducted in a manner that maintains two-way traffic flow on public roadways in the vicinity of the work site. If temporary lane closures are necessary, they will be coordinated with the appropriate jurisdictional agency and scheduled to occur outside of peak traffic hours (7:00 – 10:00 a.m. and 3:00 – 6:00 p.m.) to the maximum extent practicable. Any lane closures will include advance warning signage, a detour route and flaggers will be provided in both directions. Work will be coordinated with local emergency service providers as necessary to ensure that emergency vehicle access and response is not impeded.</li> <li>2. Heavy equipment and haul traffic will be prohibited in residential areas, except when no other route to and from the site is available.</li> <li>3. Roadway segments or intersections in the vicinity of project sites will be assessed to determine if they are at, or approaching a Level of Service (LOS) that exceeds local standards. Work traffic will avoid these locations, either by traveling different routes or by traveling at non-peak times of day.</li> </ol>

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4. 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.
  5. Access for driveways and private roads will be maintained. If brief periods of construction would temporarily block access, property owners will be notified prior to activities.

### **Hazardous Materials Safety**

HAZ-1      Spill Prevention and Response

1. Equipment and materials for cleanup of spills will be available on site and spills and leaks will be cleaned up immediately and disposed of properly.
2. Prior to entering the work site, all field personnel shall be appropriately trained in spill prevention, hazardous material control, and clean-up of accidental spills.
3. Field personnel shall implement measures to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means.
4. Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations). All field personnel shall be advised of these locations and trained in their appropriate use.

The Water Agency will routinely inspect the work site to verify that items 1-4 above are properly implemented and maintained.

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.

As defined in 40 CFR 110, a federal reportable spill of petroleum products is the spilled quantity that:

- violates applicable water quality standards;
- causes a film or sheen on, or discoloration of, the water surface or adjoining shoreline; or

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- causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

If a spill is reportable, the Water Agency will take action to contact the appropriate safety and cleanup crews to ensure that the Spill Prevention and Response Plan is followed. A written description of reportable releases must be submitted to the appropriate RWQCB and the California Department of Toxic Substances Control (DTSC). This submittal must contain a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases will be documented on a spill report form.

If an appreciable spill has occurred, and results determine that project activities have adversely affected surface water or groundwater quality, a detailed analysis will be performed to the specifications of DTSC to identify the likely cause of contamination. This analysis will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the Water Agency will select and implement measures to control contamination, with a performance standard that surface and groundwater quality must be returned to baseline conditions. These measures will be subject to approval by DTSC and RWQCB.

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HAZ-2	Equipment and Vehicle Maintenance	<ol style="list-style-type: none"><li>1. All vehicles and equipment will be kept clean. Excessive build-up of oil or grease will be avoided.</li><li>2. Vehicle and equipment activities will be conducted off-site or in a designated, protected area away from the channel where vehicle fluids and spills can be handled with reduced risk to water quality.</li><li>3. If maintenance must occur on-site, designated areas will not directly connect to the ground, surface waters, or the storm drainage system to prevent the run-on of stormwater and runoff of spills. The service area will be clearly designated with berms, sandbags, or other barriers.</li></ol>
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		<ol style="list-style-type: none"> <li>4. Secondary containment, such as a drain pan or drop cloth, to catch spills or leaks will be used when removing or changing fluids. Fluids will be stored in appropriate containers with covers, and properly recycled or disposed of off-site.</li> <li>5. Cracked batteries will be stored in a non-leaking secondary container and removed from the site.</li> <li>6. Spill clean-up materials will be stockpiled where they are readily accessible.</li> <li>7. 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 on-site.</li> </ol>
HAZ-3	Equipment and Vehicle Cleaning	<ol style="list-style-type: none"> <li>1. Equipment will be cleaned of any sediment or vegetation before transferring and using in a different watershed to avoid spreading pathogens or exotic/invasive species between watersheds.</li> <li>2. Vehicle and equipment washing will occur on-site as needed to prevent spread of pathogens or exotic/invasive species. No runoff from vehicle or equipment washing will be allowed to enter waters of the State, including the creek channel or storm drains, without being subjected to adequate filtration (e.g., vegetated buffers, hay wattles, or bales, silt screens). The discharge of decant water from any on-site wash areas to waters of the State or to areas outside of the active project site is prohibited. Additional vehicle and equipment washing will occur on an appropriate wash rack at the Water Agency's maintenance center.</li> </ol>
HAZ-4	Refueling	<ol style="list-style-type: none"> <li>1. All off-site fueling sites (e.g., on access roads above the top-of-bank) shall be equipped with secondary containment and avoid a direct connection to underlying soil, surface water, or the storm drainage system.</li> <li>2. For stationary equipment that must be fueled on-site, 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.</li> </ol>
HAZ-5	On-Site Hazardous Materials Management	<ol style="list-style-type: none"> <li>1. The products used and/or expected to be used and the end products that are produced and/or expected to be produced after their use will be inventoried.</li> </ol>

		<ol style="list-style-type: none"> <li>2. As appropriate, containers will be properly labeled with a “Hazardous Waste” label and hazardous waste will be properly recycled or disposed of off-site.</li> <li>3. Contact of chemicals with precipitation will be minimized by storing chemicals in watertight containers or in a storage shed (completely enclosed), with appropriate secondary containment to prevent any spillage or leakage.</li> <li>4. Quantities of equipment fuels and lubricants greater than 55 gallons shall be provided with secondary containment that is capable of containing 110% of the primary container(s).</li> <li>5. Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials shall not be allowed to enter receiving waters or the storm drainage system.</li> <li>6. Sanitation facilities (e.g., portable toilets) will be surrounded by a berm, and a direct connection to the storm drainage system or receiving water will be avoided.</li> <li>7. Sanitation facilities will be regularly cleaned and/or replaced, and inspected regularly for leaks and spills.</li> <li>8. Waste disposal containers will be covered when they are not in use, and a direct connection to the storm drainage system or receiving water will be avoided.</li> <li>9. All trash that is brought to a project site during construction activities (e.g., plastic water bottles, plastic lunch bags) will be removed from the site daily.</li> </ol>
HAZ-6	Existing Hazardous Sites or Waste	If hazardous materials, such as oil or paint cans, are encountered at the project site, the Water Agency will carefully remove and dispose of them according to the Spill Prevention and Response plan. Water Agency staff will wear proper protective gear and store the waste in an appropriate hazardous waste container until it can be disposed at a hazardous waste facility.
HAZ-7	Fire Prevention	<ol style="list-style-type: none"> <li>1. All earthmoving and portable equipment with internal combustion engines will be equipped with spark arrestors.</li> <li>2. During the high fire danger period (April 1–December 1), work crews will have appropriate fire suppression equipment available at the work site.</li> </ol>

3. On days when the fire danger is high and a burn permit is required (as issued by the relevant Air Pollution Control District), flammable materials, including flammable vegetation slash, will be kept at least 10 feet away from any equipment that could produce a spark, fire, or flame.
4. On days when the fire danger is high and a burn permit is required, portable tools powered by gasoline-fueled internal combustion engines will not be used within 25 feet of any flammable materials unless at least one round-point shovel or fire extinguisher is within immediate reach of the work crew (no more 25 feet away from the work area).

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### Vegetation Management

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| VEG-1 | Removal of Existing Vegetation                   | <ol style="list-style-type: none"> <li>1. Vegetation pruning and removal activities will be conducted under the guidance of a staff biologist or certified arborist.</li> <li>2. Only vegetation that is noxious, invasive, hazardous, or could obstruct channel flows will be removed, which is largely Himalayan blackberry. Native trees may be pruned or removed if located within the access road and high flow channel construction area. Herbaceous layers that provide erosion protection and habitat value will be left in place. Invasive plant species that inhibit the health and/or growth of native riparian trees will be targeted for removal.</li> <li>3. Large mature riparian trees outside of the access route and high flow channel construction area will be avoided.</li> <li>4. Large woody debris, stumps, or root wads that are fully or partially buried and do not present a flood hazard shall be allowed to remain in place to provide habitat and to maintain bank stability.</li> </ol> |
| VEG-2 | Planting and Revegetation After Soil Disturbance | <ol style="list-style-type: none"> <li>1. Sites where construction activities result in exposed soil will be stabilized to prevent erosion and revegetated with native vegetation as soon as feasible after activities are complete.</li> <li>2. Biodegradable erosion control fabric, hydromulch, or other mechanism will be applied as appropriate to provide protection to seeds, hold them in place, and help retain moisture.</li> </ol>   |

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### Water Quality and Channel Protection

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WQ-1	Apply Erosion Control Fabric to or Hydroseeding of Exposed Soils	<ol style="list-style-type: none"><li>1. Upland soils exposed due to project activities will be seeded and stabilized using erosion control fabric or hydroseeding. The channel bed and other areas below ordinary high water mark are exempt from this BMP.</li><li>2. Erosion control fabric will 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, but only if there are no indications that special status species would not be impacted by the application.</li><li>3. The site will be properly prepared to make sure the fabric/mat has complete contact with the soil. Sites can be prepared by grading and shaping the installation area; removing all rocks, dirt clods, vegetation, etc.; preparing the seedbed by loosening the top 2- to 3-inches of soil; and applying soil amendments as directed by soil tests, the seeding plan, and manufacturer's recommendations.</li><li>4. Erosion control fabric will be anchored in place. Anchors can include U-shaped wire staples, metal geotextiles stake pins or triangular wooden stakes.</li><li>5. The manufacturer's installation recommendations will be followed.</li><li>6. Other erosion control measures shall be implemented as necessary to ensure that sediment or other contaminants do not reach surface water bodies for stockpiled or reused/disposed sediments.</li></ol>
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**Table 3: Estimated Impacts of Proposed Project Activities to Wetlands and Waters.**

Project Component Feature	Total	CWA Section 404		Waters of the State	Fish and Game Code 1602
		Waters of US	Wetlands		
Vegetation Removal					
Access Road	350 linear ft [0.13 ac]	0	0	350 linear ft [0.13 ac]	350 linear ft [0.13 ac]
High Flow Channel (blackberry removal during 1 <sup>st</sup> year construction)	549 linear ft [0.29 ac]	0	0	549 linear ft [0.29 ac]	549 linear ft [0.29 ac]
Historic Channel	970 linear ft [0.36 ac]	0	0	970 linear ft [0.36 ac]	970 linear ft [0.36 ac]
<b>Total Vegetation</b>	<b>1,869 linear ft [0.78 ac]</b>	<b>0</b>	<b>0</b>	<b>1,869 linear ft [0.78 ac]</b>	<b>1,869 linear ft [0.78 ac]</b>
Temporary Fill					
Access Road Ramp across Historic Channel	40 cy [0.02 ac]	40 cy [0.02 ac]	0	40 cy [0.02 ac]	40 cy [0.02 ac]
Coffer Dams (up to 4)	67 cy [0.01 ac]	67 cy [0.01 ac]	0	67 cy [0.01 ac]	67 cy [0.01 ac]
<b>Total Fill</b>	<b>107 cy [0.03 ac]</b>	<b>107 cy [0.03 ac]</b>	<b>0</b>	<b>107 cy [0.03 ac]</b>	<b>107 cy [0.03 ac]</b>
Temporary Wetland Vegetation Disturbance					
Active Channel (equipment trampling)	0.25 ac	<b>0</b>	0.25 ac	0.25 ac	0.25 ac
Excavation					
Active Channel (1 <sup>st</sup> year impact and maintenance)	964 cy [0.25 ac]	964 cy [0.25 ac]	0	964 cy [0.25 ac]	964 cy [0.25 ac]



Project Component Feature	Total	CWA Section 404		Waters of the State	Fish and Game Code 1602
		Waters of US	Wetlands		
High Flow Channel (1 <sup>st</sup> year construction)	1,767 cy [0.29 ac]	68 cy [0.01 ac]	0	1,767 cy [0.29 ac]	1,767 cy [0.29 ac]
High Flow Channel (post-construction annual maintenance)	1,767 cy [0.29 ac]	1,767 cy [0.29 ac] <sup>1</sup>	0	1,767 cy [0.29 ac] <sup>1</sup>	1,767 cy [0.29 ac] <sup>1</sup>
<b>Total Annual Excavation</b>	<b>2,731 cy</b> <b>[0.54 ac]</b>	<b>2,731 cy</b> <b>[0.54 ac]</b>	<b>0</b>	<b>2,731 cy</b> <b>[0.54 ac]</b>	<b>2,731 cy</b> <b>[0.54 ac]</b>

<sup>1</sup> The 0.29 acre of excavation includes the 0.01 acre excavated during the first year of construction of the high flow channel.

Abbreviations: cubic yards = cy. Acres = ac.

### **2.3.1 Remove Vegetation within Work Area**

The Proposed Project includes vegetation removal along the temporary access road, historic channel, and high flow channel (Figure 4, Table 3). Approximately 0.78 acre of understory vegetation would be removed during construction, including on the temporary access road at 0.13 acre (350 feet by 16 feet), 0.36 acre of the historic channel (970 feet long by 16 wide), and 0.29 acre of high flow channel (549 feet long by 22-26 feet wide). The blackberry along the high flow channel would be replaced with aquatic habitat after the first year of construction. Most of the vegetation requiring removal is nonnative Himalayan blackberry. Tree species and sizes removed along the access road would include the following:

- 1 Oregon ash (*Fraxinus latifolia*), 7 inch diameter at breast height (dbh)
- 1 Oregon ash, 11 inch dbh
- 12 Oregon ash dbh, less than 4 inches dbh
- 1 arroyo willow (*Salix lasiolepis*), re-sprouting from a stump, less than 4 inches dbh

Several retained trees may be pruned (low hanging limbs removed) to allow heavy equipment access. Work would be performed using chainsaws and hedgers. Vegetation within the active channel providing aquatic cover, including overhanging blackberry canes, would be avoided.

Invasive Himalayan blackberries would be selectively removed along the historic channel. This vegetation management would increase flood capacity and enhance the native riparian habitat. Also, small woody debris jams that restrict flood flows would be removed. All trees, native shrubs, and large woody debris would be retained to preserve fish and wildlife habitat as well as the natural character of the channel. This work would be conducted during the summer when the channel is typically dry. If standing water is present vegetation activities would be restricted to avoid potential disturbance to aquatic species.

In addition, blackberry would be removed along the high flow channel prior to excavation.

### **2.3.2 Temporary Access Road**

A temporary access road would be installed to allow for equipment access to the high flow channel construction area (Figure 4, Table 3). The route was designed to avoid mature riparian trees. The temporary access road would cross the historic channel from a private gravel road to the west, then continue along an elevated sediment bar to the high flow channel project area. Most of the route is covered with Himalayan blackberry and is expected to be dry during the summer construction period, including the historic channel. To cross the historic channel a temporary ramp would be installed consisting of

40 cubic yards (cy) of crushed rock (road base) placed within a 0.02 acre (50 feet by 20 feet) section of the historic channel. Geotextile fabric would be placed over the channel bed before installing the road base. The fill and geotextile fabric would be removed following completion of construction activities annually and reinstalled each year for maintenance.

### **2.3.3 High Flow Channel and Active Channel Excavation**

A high flow channel would be excavated along an existing sediment bar covered with Himalayan blackberry (Figure 4, Table 3). The high flow channel will branch from the active channel and extend approximately 549 feet downstream until reconnecting with the active channel. The channel bottom would be 20 feet wide with a top of bank width from 22 to 26 feet. The depth of the channel would range from 2.6 to 4.6 feet. Volume of excavation would be 1,767 cy of sediment. The bottom of the high flow channel would be one foot higher than the active channel. During rain events, the high flow channel would accommodate storm flows and help to redirect water away from Green Valley Road. During periods when the creek has normal water levels the high flow channel would be dry.

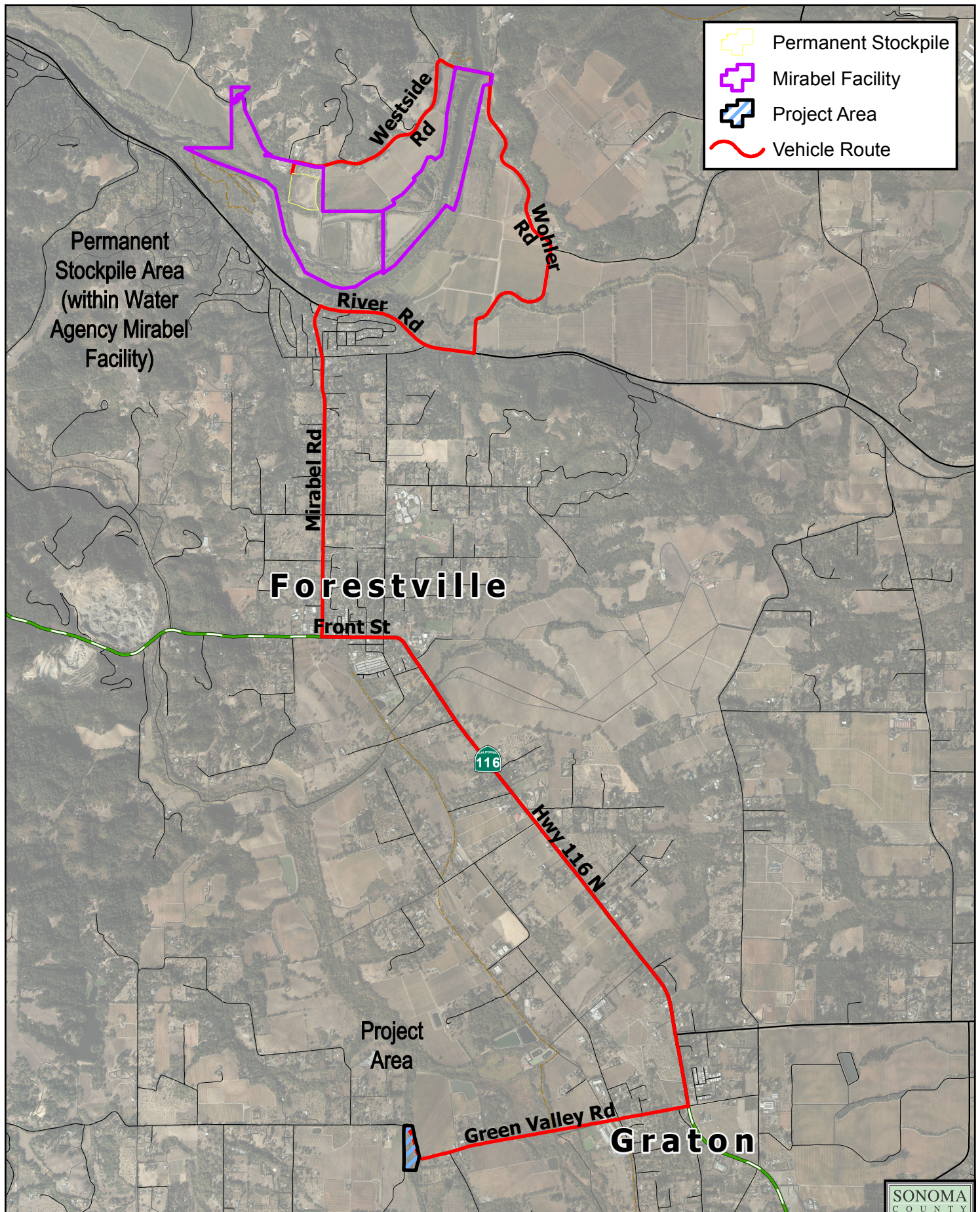
A channel cross-section of the high flow channel is shown on Figure 5. The channel bank would be steep on one side and gradual on the other to provide a range of aquatic habitat types. A vertical bank would be excavated on the west side of the channel and overhanging blackberry canes would be maintained to provide cover for aquatic species, including salmonids and CFWS. The east bank would have an approximately 2 to 1 ratio slope to provide open canopy shoreline for species that prefer this type of habitat, including FYLF and juvenile California red-legged frog. The current active channel has a similar cross-section configuration (Figures 2C and 5).

Channels with flowing or standing water would be dewatered prior to sediment removal. The active channel has perennial flows and the high flow channel may contain water during annual maintenance activities (see Section 2.4). If flowing water is present, temporary coffer dams would be installed at the upper and lower ends of the channel to isolate the work area. Cofferdams would consist of sandbags or crushed gravel placed on plastic sheeting. The upstream dam would be built high enough to redirect water through another channel to maintain continuous stream passage for fish. Up to four coffer dams may be used with a total area of 0.01 ac and volume of 67 cy. Dewatering would be completed by pumping water from a screened basin through a filter (silt mattress) to remove fine sediment before reentering the creek downstream of the project area. Prior to and during dewatering a fish and wildlife rescue would be implemented (Table 2).

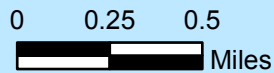
An excavator, loader, and dump trucks would be used to remove sediment. Equipment would work in the high flow channel and on top of bank of the active channel adjacent to

Green Valley Road. Spoil material would be temporarily stockpiled in an upland site on an adjacent private property (Figure 3). The spoils would be transported to the Water Agency's Mirabel Facilities for permanent disposal (Figure 6). Spoil would not be placed within the dripline of trees.

In addition, sediment that has accumulated in the active channel since winter 2017 would be removed. This construction would return the active channel to its 2017 engineered design depth established during the Emergency Repair of Green Valley Creek Flood Project. This section consists of approximately 500 linear feet of channel, 24-28 feet wide, that parallels Green Valley Road. The excavation channel would be 0.25 ac and sediment removal would be 964 cy. Heavy equipment would work from the top of bank next to the road and affect 0.25 acre of wetland and blackberry vegetation. Appendix A includes Proposed Project plan and profile views.



**Figure 6. Proposed Permanent Stockpile Location.**



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### **2.3.4 Project Maintenance**

Project activities described in Sections 2.3.1 – 2.3.3 would be implemented annually based on sediment accumulation and vegetation growth impairing flood capacity or causing a condition where prolonged flooding or property damage was likely. The channels will be monitored to quantify the extent of sediment accumulation. Sediment management triggers listed in Table 4 would be used to determine if sediment removal is needed.

Vegetation maintenance would coincide with sediment removal activities. Installation of the gravel ramp across the historic channel and coffer dams on the active and high flow channels would be temporary disturbances lasting a few days or weeks and occur at the same locations each year of maintenance. Annual sediment removal may be up to 2,731 cy and would be quantified by the number of dump truck loads. Maintenance activities would occur for five years.

### **2.3.5 Revegetation Plan and Monitoring**

The revegetation plan strives to balance the disturbance from sediment removal, the continued deposition of sediment from upstream sources, and the range of habitat needs of special status aquatic and semi-aquatic species that may occur in the project area. These species can have conflicting habitat needs and create unique challenges when designing a restoration plan. For example, Himalayan blackberry is typically considered a non-native invasive plant that is removed and replaced with native riparian plants; however, CFWS use overhanging blackberry canes for foraging and cover. Also, riparian restoration typically focuses on developing a closed canopy that shades and cools aquatic habitat that is preferred by salmon and steelhead; however, FYLF prefer open canopy shorelines for basking. The enhancement plantings for the Proposed Project would be installed along the high flow channel. The existing vegetation along the historic and active channels would be maintained. The objectives of the revegetation plan have been tailored to the need of these special status species and are specific to the three channels in the project area, as follows:

- Historic channel – maintain existing mature riparian forest and remove Himalayan blackberry from the channel bed and banks.
- Active channel - maintain existing aquatic habitat and bank vegetation, including west bank overhanging Himalayan blackberry, east bank exposed shoreline, and east bank clumped willows.
- High flow channel – create and maintain overhanging Himalayan blackberry on the west bank and install patchy low-stature wetland plants on exposed shoreline on east bank.

The habitat along the high flow channel would consist of open water for fish, overhanging blackberry for CFWS, and patchy exposed shoreline for FYLF. Plants would be installed along the upper east bank of the high flow channel in a patchy pattern. Planting within the channel bottom would be avoided to allow annual sediment removal maintenance activities and maintain exposed shoreline habitat for FYLF. Plantings would be conducted in late fall 2018 once initial construction is completed. Plant material would be obtained from local nurseries or collected in the project vicinity. Hand weeding would be conducted in spring to early summer to remove invasive species in the planted areas.

#### *2.3.5.1 Monitoring*

Plantings would be monitored annually for five years from initial planting using a line intercept method. The east bank plantings would be successful if, after five years, 25% of the shoreline is covered with plantings or other native wetland species, and 75% of the shoreline is exposed gravel bar. The extent of overhanging blackberry on the west bank would be recorded. In addition, visual encounter surveys for fish and FYLF, and dipnet surveys for CFWS would be conducted annually in the three project channels to evaluate habitat use in the project area. Several photographic stations will be established along the channels in the project area for annual comparison of habitat conditions.

To better understand how flood events transport and deposit sediment in the project channels, sediment monitoring would be employed. Two sediment gages would be placed in each of the excavated high flow and active channels in 2018. The gages would be positioned approximately 50 feet apart in the upstream area of the channels where high deposition is expected. The gages would be monitored after large winter rain events, once flows subside and allow for safe access. Aggradation recordings would be compared with rainfall from a local weather station and a California Data Exchange Center (CDEC) stage gage located on Green Valley Creek at Martinelli Road. A temperature data logger would also be installed at the elevation of Green Valley Road next to the flood prone area to record the frequency of floodwaters overtopping the roadway. When the data logger is submerged there is a clear change in temperature, indicating the road is flooded. This monitoring would clarify the relationship between flood intensity and aggradation and inform future management planning.

Monitoring reports that describe construction and maintenance activities, success of plantings, sediment gage data, and fish and wildlife observations in the project area would be submitted annually by January 31 for five years.

**Table 4: Potential sediment management triggers for Proposed Project maintenance.**

Sediment Removal Triggers used to determine if annual sediment removal activities are appropriate for the Green Valley Creek High Flow Channel Project.
<ul style="list-style-type: none"> <li>• Sediment accumulating at road crossings, threatening to cause flow outbreaks on road.</li> <li>• Sediment is aggrading such that flood conveyance, channel capacity, and/or freeboard requirements are compromised.</li> <li>• Gravel bar surface above ordinary high water mark.</li> <li>• Monitoring of sedimentation gages in the active and high flow channels indicate a combined 25% loss of channel capacity.</li> <li>• Sediment filled in-stream basin such that facility function is compromised for following storm season.</li> <li>• Sediment accumulation deflecting flows and causing significant side bank scour.</li> <li>• Significant bed erosion is occurring and/or channel is incising below design.</li> <li>• Instream debris/sediment creating flow constriction leading to excessive upstream deposition or downstream erosion.</li> </ul>

**Table 5: Proposed Project planting design.**

Plant Species List	Size	Type	Total Number	Placement
<i>Artemisia douglasiana</i> (mugwort)	1 gal	Herbaceous perennial	75	Scattered along bank.
<i>Elymus triticoides</i> (creeping wildrye)	1 gal	Upland graminoid	75	Group 5-10 plants.
<i>Carex barbarae</i> (Santa Barbara sedge)	1 gal	Bank graminoid	35	Group 5-10 plants.
<i>Juncus patens</i> (common rush)	1 gal	Bank graminoid	35	Group 5-10 plants.
<b>Estimated Totals</b>			<b>220</b>	



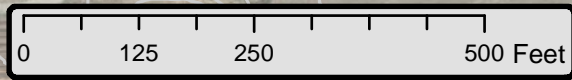
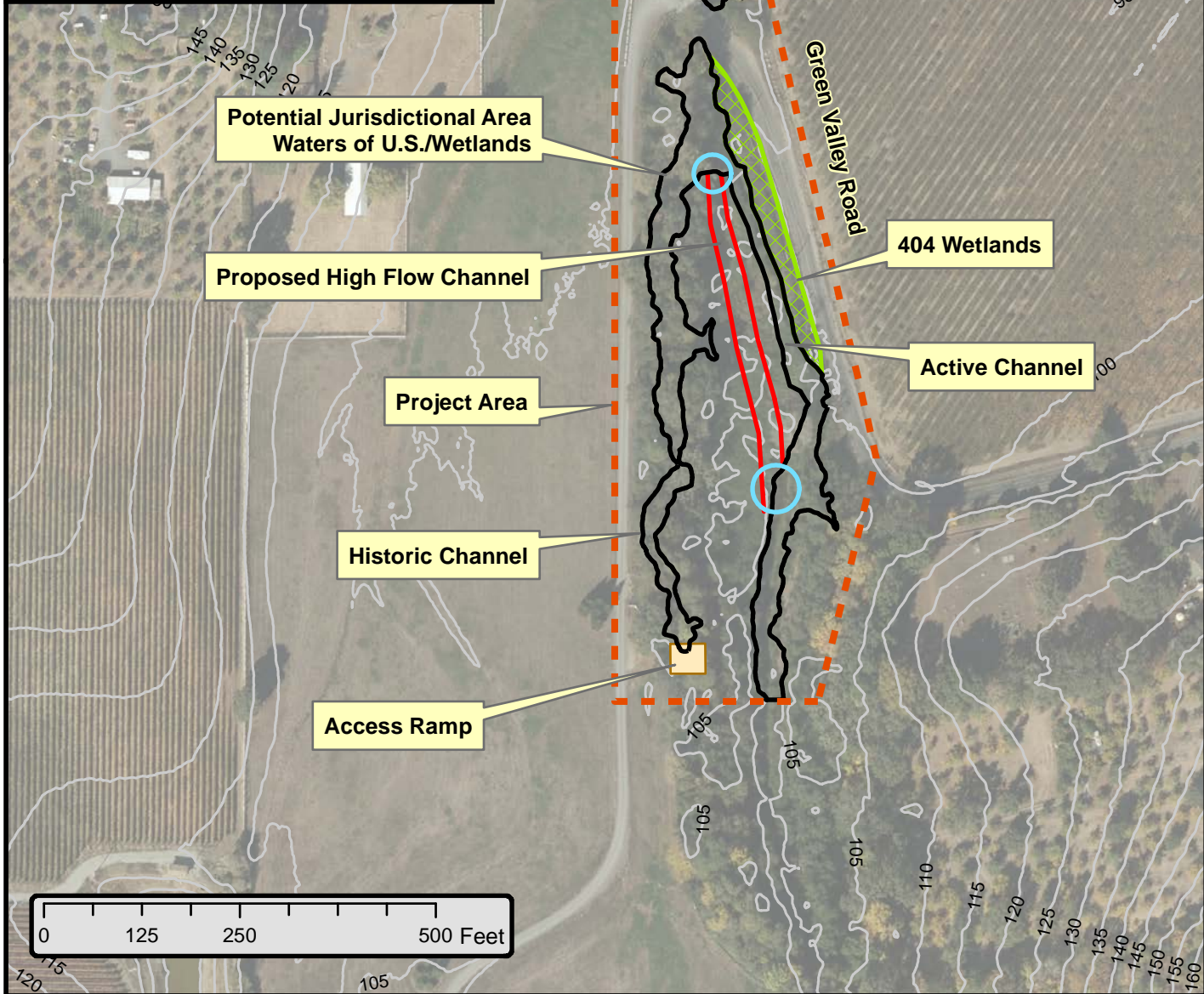
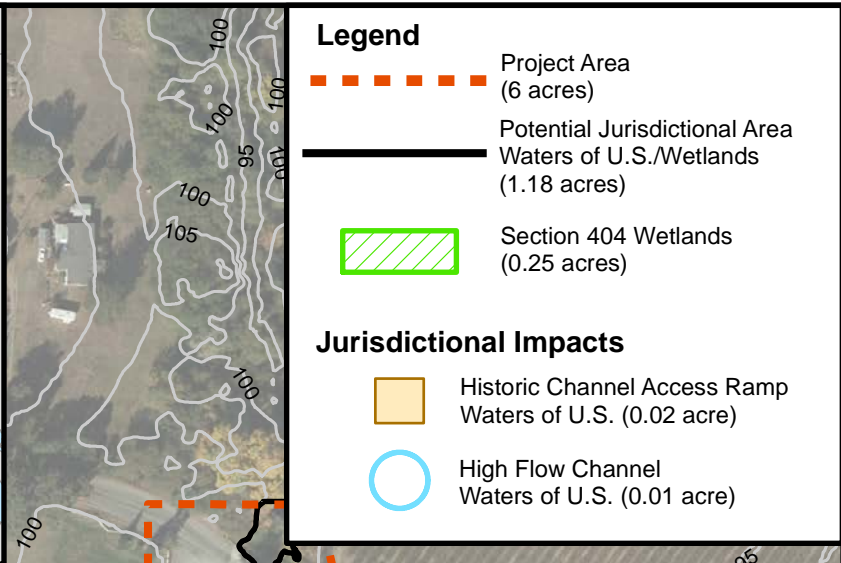
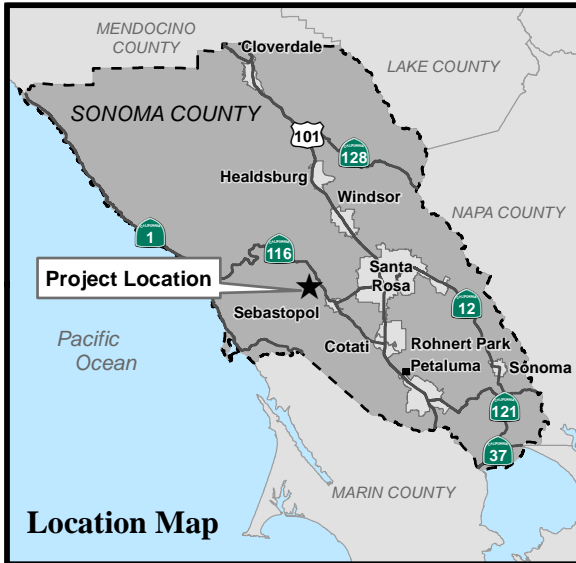
### **2.3.6 Species Protection and Jurisdictional Wetlands**

The Proposed Project's BMPs (Table 2) were developed to protect the riparian and aquatic resources along Green Valley Creek. These measures are best management procedures currently implemented by the Water Agency for other stream flood control projects. These BMPs would avoid or minimize disturbance to wetland and aquatic habitats, common fish and wildlife, nesting birds, and special status species, including the endangered CFWS, endangered coho salmon, threatened steelhead, threatened Chinook salmon, threatened California red-legged frog, candidate foothill yellow-legged frog, species of concern California giant salamander, and species of concern western pond turtle.

A summary of temporary impacts to jurisdictional wetland features are listed in Table 3 and shown on Figure 7. The historic and active channels in the project area are Waters of the US under the jurisdiction of the federal Clean Water Act (CWA). Jurisdictional CWA Section 404 wetlands are located between the active channel and Green Valley Road. CWA Section 401 Waters of the State includes the area between the creek banks, which is bordered by Green Valley Road and the historic channel outer bank. The project area between creek banks, including the riparian zone along the historic channel, is under the jurisdiction of Section 1600 of the California Fish and Game Code.

The Proposed Project would temporarily fill 0.03 acre (historic channel crossing and four coffer dams) and excavate 0.26 acre of Waters of the US (Table 3). The excavate of the 0.26 acre of Waters of the US would consist of 0.25 ac of active channel and 0.01 ac during the initial construction of the high flow channel at the upstream and downstream ends of the channel where it connects to Green Valley Creek. Construction of the high flow channel would create 0.29 acre of Waters of the US, which is currently non-jurisdictional uplands covered with Himalayan blackberry. Once the high flow channel is excavated it would be jurisdictional Waters of the US that would be temporarily impacted during annual maintenance. The total excavation for the historic channel, active channel, and created high flow channel would be 0.54 acre. In addition, heavy equipment staged at the top of bank to excavate the active channel would disturb by trampling 0.25 acre of Section 404 wetlands.

The impact area under the jurisdiction of Section 401 Waters of the State and California Fish and Game Code would consist of all wetland features disturbed during construction, including 0.78 acre of vegetation removal, 0.03 acre (107 cy) of temporary fill, 0.25 acre temporary wetland disturbance, and 0.54 acre (2,731 cy) of excavation.



**Figure 7: Jurisdictional Wetland Features in the Project Area.**



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### 2.3.7 Timing of Work, Monitoring and Reporting

Project construction is anticipated to take up to three weeks between August 1 and October 15, 2018. Revegetation activities would be completed during late fall 2018. Maintenance of the active and high flow channels would likely occur annually for five years depending on annual deposition of sediment.

Monitoring would be conducted to assess survival and ecological function at the site during the five years of maintenance activities. Monitoring would be conducted to evaluate the efficacy of the revegetation methods and to develop corrective measures, if required. Monitoring would involve collecting quantitative data on vegetative cover, percent survival of plantings, and photo documentation of revegetation areas.

Annual reports of project activities, monitoring findings, success criteria, and corrective measures would be completed by January 31 for five years. See Table 6 for Proposed Project timeline of activities.

**Table 6: Schedule for Green Valley Creek High Flow Channel Project.**

Year	Activities Summary	Reporting
2018	<ul style="list-style-type: none"> <li>• High flow channel construction,</li> <li>• Maintenance of active channel,</li> <li>• Invasive blackberry management and debris jam removal in historic channel, and</li> <li>• Revegetation.</li> </ul>	Annual Report submitted January 31, 2019
2019-2022	<p>As needed annually, based on site assessments:</p> <ul style="list-style-type: none"> <li>• Maintenance of high flow channel,</li> <li>• Maintenance of active channel, and/or</li> <li>• Invasive blackberry management and debris jam removal in historic channel.</li> </ul>	Annual Report submitted January 31, 2020-2023

## 3.0 Environmental Setting

This chapter presents the environmental setting focusing on the physical and biological conditions of the Proposed Project area. This information provides the foundation for disclosing onsite conditions and potential impacts discussed in Chapter 4.

The resource setting also provides an important basis for environmental compliance. Physical and biological resources have been considered to address the regulatory requirements of the federal Endangered Species Act (ESA), California Endangered Species Act (CESA), CWA Sections 401 and 404, the Porter-Cologne Water Quality Control Act, and California Fish and Game Code Section 1600 et seq. The sections below characterize the conditions in the Proposed Project vicinity.

### 3.1 Topography and Land Use

The Russian River watershed consists of a series of valleys surrounded by two mountainous coastal ranges, the Mendocino Highlands to the West and the Mayacamas Mountains to the east. The Santa Rosa Plain, Alexander Valley, Hopland (or Sanel) Valley, Ukiah Valley, Redwood Valley, Potter Valley and other small valleys comprise about 15 percent of the watershed. The remaining area is hilly to mountainous. Major tributaries are Dry Creek and Mark West Creek.

Green Valley Creek is a tributary to the lower Russian River and is located downstream from the larger Dry and Mark West creeks. Green Valley Creek is a low to moderate gradient stream with its headwaters in the Bohemian Grove at an elevation of around 600 feet. At the confluence with the Russian River the elevation is approximately 200 feet. The project area is in a low gradient reach along a valley floor near the confluence with the marshy Atascadero Creek. The low-lying Green Valley Creek-Atascadero Creek area is an alluvial fan and natural depositional zone for sediment.

Principal communities in the Green Valley Creek vicinity are Graton, Forestville, Sebastopol, and Occidental. Predominant land uses in the project vicinity are agriculture, rural residential, and local businesses in Graton. Land uses adjacent to the project area are undeveloped, vineyard, orchard, small cemetery, and rural residences.

### 3.2 Geology and Soils

#### 3.2.1 Regional Tectonism and Older Rocks

The geology and structure of Sonoma County has been shaped through a dynamic history of tectonism along the San Andreas Fault Zone (GOES 2000). The northwest-southeast alignment of this fault zone with its characteristic right-lateral strike-slip tensional

movement is reflected in the alignment and orientation of the region's ridgelines and valleys. Movement along the fault zone was not only lateral, but also included compression resulting in the mountain building of the Coast Ranges, including the project area. In geologic terms, this combination of lateral-tension plus compression is known as transpression. In Sonoma County, the main artery of the San Andreas Fault roughly follows Highway 1 near the coast. The Healdsburg-Roger's Creek and Mayacama faults represent more interior arms of the San Andreas system, sharing its same orientation. Green Valley Creek is located between these two major fault zones.

The San Andreas Fault has been relatively quiet in Sonoma County since the historic 1906 earthquake (magnitude 8.3). The Healdsburg-Rogers Creek and Mayacama faults are considered active faults with known activity during the Holocene period (last 10,000 years). Of recent note, in 1969 two moderate earthquakes (magnitudes 5.6 and 5.7) along the Rogers Creek Fault caused moderate damage in Santa Rosa.

The distribution and sequence of rock types in the project vicinity reflect the area's geologic history (Norris and Webb 1990). The oldest rocks include the Great Valley Complex with its tilted marine sedimentary layers, mostly sandstones and shales, which underlays much of the project area. Also, prevalent are rocks of the Franciscan Complex, a mixture of chert, basalt, shale, metamorphic rocks, and mélangé created by subduction zone processes. Wilson Grove Formation consisting of marine sandstone, conglomerate, and tuff (Wagner and Bortugno 1982). Upstream of the project area the geology is described as alluvium, which may better characterize the stream deposited material present in the project area.

### **3.2.2 Soils**

At the association level, soils are generally distinguished according to their geomorphic and topographic setting; whether they are in basins, tidal flats, floodplains, terraces, alluvial fans, high terraces, foothills, uplands, and mountains. In general, the soils in the lowland basins, floodplains, and alluvial fans range from gravelly sandy loams to clays; most often composed of clays and clay loams that formed in alluvium from sedimentary and volcanic material. These soils vary in drainage capacity from poor to excessive, with the more clay-textured soils draining more poorly. The soils on the high terraces, foothills, uplands, and mountains consist of gravelly to stony sandy loams to clay loams and range in drainage capacity from moderate to excessive, with the coarser textured soils draining better.

While inherent erodibility is important in considering a soil's potential erosion, often it is the slope, type of land use, and intensity of land practices which are the more important determinants of potential erosion. Most of the headwaters of the project vicinity have high erosion potential. The Soil Survey of Sonoma County identifies the project vicinity as

Blucher loam (USDA 1990); however, the Green Valley Creek project area is more characteristic of alluvial lands that contain recent sediment deposition along streams.

### 3.3 Climate and Precipitation

The project area has a Mediterranean climate with cool wet winters and warm dry summers. Annual and seasonal variability in temperatures and rainfall are high. Spring and summer prevailing westerly winds in the project area are influenced by cool and moist coastal marine air. Summer average daily maximum temperatures are in the low to mid 80s, while winter average daily minimum temperatures are in the high 30s to low 40s. Precipitation primarily falls between November and March in the project area. Average annual rainfall in the project vicinity is 32 inches (Sterling's Best Places 2018) ([http://www.bestplaces.net/climate/city/california/santa\\_rosa](http://www.bestplaces.net/climate/city/california/santa_rosa)).

### 3.4 Plant Communities and Wildlife Habitats

The plant communities and wildlife habitats of the upper Green Valley Creek watershed contains forests, woodlands, riparian and aquatic, grasslands, and agricultural lands. The upper watershed supports mixed evergreen forest that includes coast redwood (*Sequoia sempervirens*) and Douglas-fir (*Pseudotsuga menziesii*). At lower elevation the forest composition changes to valley oak (*Quercus lobata*), black oak (*Quercus kelloggii*), coast live oak (*Quercus agrifolia*), Oregon oak (*Quercus garryana*), California bay (*Umbellularia californica*), and madrone (*Arbutus menziesii*), mixed with patches of grassland. Most of the gentler terrain of the lower watershed is used for agricultural and residential purposes, including the project area. Occasional mature oaks dot these landscapes, remnants of what was probably extensive oak forest/woodland and native grassland in historic times. In the project area, the dominant natural communities include in-stream emergent wetland, riparian woodland, blackberry scrub, and ruderal. These habitats are further described below.

#### 3.4.1 Emergent Wetlands and Aquatic Habitats

Patches of seasonal and emergent wetland occur in low-lying areas along Green Valley Creek. Plants occurring in this community include small-fruited bulrush (*Scirpus microcarpus*), common rush (*Juncus patens*), umbrella sedge (*Cyperus eragrostis*), rice cutgrass (*Leersia oryzoides*), knotgrass (*Paspalum distichum*), American brooklime (*Veronica americana*), and spikerush (*Eleocharis macrostachya*). Historically, this kind of habitat within the watershed supported a number of rare plant species, including federally endangered Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*), as well as saline clover (*Trifolium depauperatum* var. *hydrophilum*). Agricultural and residential developments reduced the amount of marsh habitat in the watershed and none of these species has been documented in recent times. This habitat is very limited within the project area due to past instream flood management (sediment removal, levee and road

and bridge construction) and recent aggradation of sediment that has filled much of the creek and remaining flood plain.

Aquatic habitat in the project area consists of two channels. The active perennial channel was excavated during March 2017 and consists of an incised straight channel with uniform bed of sand and small gravel. The historic channel is seasonal and only contains flowing water during flood events. There are shallow pools with sand silt substrate that form when water is present. Both channels have banks covered in Himalayan blackberry.

Most of the fish species known from the Russian River occur in Green Valley Creek. This includes warm water native species [e.g., three-spine stickleback (*Gasterosteus aculeatus*) and Russian River tule perch (*Hysterocarpus traskii pomoi*)] and nonnative species [e.g., bluegill (*Lepomis macrochirus*), green sunfish (*Lepomis cyanellus*), and smallmouth bass (*Micropterus dolomieu*)]. Green Valley Creek supports anadromous salmonids [e.g., coho salmon (*Oncorhynchus kisutch*), steelhead (*Oncorhynchus mykiss*), and Chinook salmon (*Oncorhynchus tshawytscha*)] that require cool, clear perennial water.

The aquatic habitat along Green Valley Creek provides breeding and foraging habitat and dispersal corridors for several amphibian and reptiles species. Common stream breeding amphibians include Sierran [Pacific] treefrog [chorus frog] (*Pseudacris sierra [regilla]*), western toad (*Anaxyrus boreas*), and newts (*Taricha* spp.). Western pond turtle (*Actinemys marmorata*) and common gartersnake (*Thamnophis sirtalis*) forage along aquatic habitats. Other amphibians and reptiles may use the adjacent riparian zone and woody debris piles and layers of duff, such as California slender salamander (*Batrachoseps attenuatus*), yellow-eyed salamander (*Ensatina eschscholtzii xanthoptica*), western fence lizard (*Sceloporus occidentalis*), northern alligator lizard (*Elgaria coerulea*), and gopher snake (*Pituophis catenifer*).

### **3.4.2 Riparian Woodlands**

The riparian woodlands community includes those plant species occurring along a narrow corridor adjacent to a stream channel. Healthy and intact riparian habitat provides streambank protection, erosion control, and improved water quality. Within the upper Green Valley Creek watershed, much of the overstory vegetation in the riparian zone consists of red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), Pacific willow (*Salix lucida lasiandra*) and red alder (*Alnus rubra*). Other trees present include California bay, Douglas-fir, boxelder (*Acer negundo*), and big-leaf maple (*Acer macrophyllum*). Shrubs and herbaceous plants found in the understory include dogwood (*Cornus sericea*), poison oak (*Toxicodendron diversilobum*), snowberry (*Symphoricarpos albus*), sedges (*Scirpus* spp.), mugwort (*Artemisia douglasii*), and California figwort (*Scrophularia californica*). Within the project area there is a mature and dense riparian zone along the

historic channel dominated by alder and willow with an understory of Himalayan blackberry (*Rubus armeniacus*).

Riparian woodlands and stream channels in the Green Valley Creek watershed provide bird nesting opportunities, food, and shelter and may serve as corridors during migration for a variety of wildlife species. Birds represent the most abundant and prominent wildlife species. Common birds found in the riparian habitat include red-tailed hawk (*Buteo jamaicensis*), acorn woodpecker (*Melanerpes formicivorus*), wrentit (*Chamaea fasciata*), California towhee (*Pipilo maculatus*), western scrub jay (*Aphelocoma californica*), song sparrow (*Melospiza melodia*), golden-crowned sparrow (*Zonotrichia atricapilla*), California quail (*Callipepla californica*), and turkey vulture (*Cathartes aura*).

Riparian woodland and instream habitats support a number of mammalian species. The understory and tree cavities provide escape, cover, and nesting sites. The presence of a large number of vertebrate species may serve as a significant food source for larger predatory mammals, such as bobcat (*Lynx rufus*) and gray fox (*Urocyon cinereoargenteus*). Some of the common mammals include deer mouse (*Peromyscus maniculatus*), western gray squirrel (*Sciurus griseus*), dusky footed woodrat (*Neotoma fuscipes*), raccoon (*Procyon lotor*), and black-tailed deer (*Odocoileus hemionus columbianus*). In addition, several bat species may forage for insects over this habitat.

### **3.4.3 Blackberry Scrub/Fluvial Ruderal**

Floodplain areas that are subject to frequent disturbance from scour and sedimentation by floodwaters can be described as “fluvial ruderal” and is largely represented by gravel bar habitat, or low-lying areas immediately adjacent to a stream. The plant species that occur here can resist or avoid scouring and often have additional adaptations to endure inundation during the winter and drought during the summer. The nonnative Himalayan blackberry commonly establishes dense stands along recently deposited gravel bars. In the project area Himalayan blackberry covers most of the accumulated sediment between the historic and active channels, and between the active channel and Green Valley Road (Figure 4). Himalayan blackberry is also a large component of the historic channel riparian understory. This area is inundated annually and subject to scour at high flows and is dry during summer low flows. Other plant species in the fluvial ruderal areas in the project area include California rose (*Rosa californica*), white sweet clover (*Melilotus alba*), cattail (*Typha* ssp), bird’s foot trefoil (*Lotus corniculatus*) and barnyard grass (*Echinochloa crus-gali*). Wildlife species that use blackberry scrub are associated with Emergent Wetlands and Aquatic and Riparian Woodlands discussed above. Also, this habitat is favored by Norway rats (*Rattus norvegicus*) for food and shelter.



### **3.5 Special Status Plants, Fish, and Wildlife**

A review of special status species that may 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 website (USFWS 2017). The California Natural Diversity Database (CNDDDB) and the California Native Plant Society (CNPS) electronic inventory were also queried. The CNDDDB, CNPS, and the USFWS search results for the Proposed Project are listed in Tables B-1 through B-3 in Appendix B. These tables of special status species also include information on each species' habitat requirements, Critical Habitat (if designated), and the likelihood that those habitats are present within the project area. In evaluating the potential occurrence of special status plant and wildlife species in the project area, relevant literature, knowledge of regional biota, and observations made during the field investigations were applied as analysis criteria.

### **3.6 Project Alternatives**

The No Project alternative would mean that the Proposed Project's flood control maintenance activities would not be implemented by the Water Agency and winter flooding across Green Valley Road would continue. No action would likely result in continued degradation of the environment from erosion and sedimentation of aquatic habitats onsite and downstream, damage to adjacent properties, closures of Green Valley Road, and continued stranding of special status and common fish and wildlife species.

The Proposed Project is an interim project to reduce flood risk while a long-term solution to the continued accumulation of sediment from upstream sources can be addressed.

### **3.7 Conformance with the General Plan**

The project area is subject to the land use policies and designations adopted in the Sonoma County General Plan 2020 (SCPRMD 2008) that 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 Proposed Project appears to be consistent with applicable general plans and policies and would not limit or restrict any existing activities that occur in the project area. Also, the Water Agency would comply with County ordinances and zoning codes. Under Ordinance No. 3836R, the County of Sonoma issues roiling permits for work conducted within riparian corridors. Activities of the Proposed Project would occur within riparian areas. The Water Agency would comply with this ordinance by receiving a permit prior to project implementation, as necessary. Also, 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 Sonoma County Water Agency.”

### **3.8 Jurisdictional/Permitting Agencies**

The following are public entities and agencies that may require review of the project or that may have jurisdiction over the project area:

- U.S. Army Corps of Engineers
- National Marine Fisheries Service
- U.S. Fish and Wildlife Service
- California Department of Fish and Wildlife
- California North Coast Regional Water Quality Control Board
- Sonoma County Permit and Resources Management Department

### 3.9 Determination

Based on the finding of this Initial Study, the General Manager of the Sonoma County Water Agency has determined that the Proposed Project would not have a significant effect on the environment. Significant impacts have been largely avoided by incorporating Best Management Practices (BMP) into the Proposed Project.

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 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.

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.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Grant Davis - General Manager

## 4.0 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 4.1 through 4.19.

### Environmental Checklist and Summary of Potential Impacts

Environmental Factor	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
Aesthetics	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Agriculture and Forestry Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Air Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Biological Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cultural Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Geology and Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Greenhouse Gas Emissions	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hazards and Hazardous Materials	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hydrology and Water Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Land Use and Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mineral Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Noise	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Population and Housing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Public Services	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<b>Environmental Factor</b>	<b>Potentially Significant Impact</b>	<b>Less than Significant with Mitigation</b>	<b>Less-than-Significant Impact</b>	<b>No Impact</b>
Transportation and Traffic	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tribal Cultural Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Utilities and Service Systems	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mandatory Findings of Significance	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

With regard to the checklist, a “No Impact” response indicates that no impact would result from implementation of the Proposed Project. A “Less-than-significant Impact” response indicates that an impact is involved but is at a level which is less than significant. A “Less Than Significant With Mitigation” response indicates that an impact may potentially be significant, but the incorporation of mitigation measures would reduce the impact to a level of insignificance. A “Potentially Significant Impact” response indicates that impacts may be significant if mitigation measures are unknown, infeasible, or not proposed. Each response is discussed at a level of detail commensurate with the potential for adverse environmental effect.

## 4.1 Aesthetics

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially damage scenic resources, including trees, rock outcroppings, and historic buildings along a scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion of Potential Impacts

#### **a-c. Adverse effect on a scenic vista, scenic resource or the existing visual character of the Project site and its surroundings – *Less than Significant.***

The project area is located within the Atascadero Creek Scenic Landscape Unit identified in the Sonoma County General Plan 2020. This area consists primarily of the lowlands and floodplains along Atascadero Creek and the hills along Occidental Road. The area defines the western boundary of Sebastopol and its adjacent rural residential development, separates Sebastopol and Graton, and creates a visual connection to the Laguna de Santa Rosa. The project is within the Green Valley Creek riparian corridor. Riparian corridors are a resource type considered critical to the scenic value of the project area in the Sonoma County General Plan 2020. The majority of the project area would be visible from Green Valley Road, which parallels the project area north of Green Valley Cemetery. There would be a short-term visual impact associated with construction activities. The project would not change the habitat type within the Project site or surrounding area—the habitat type would remain riparian corridor following completion.

Project activities, such as dewatering, placement of temporary coffer dams, temporary stockpiling of materials, removal of understory vegetation (mostly blackberry), and

excavation of the high flow and active channel areas may be considered an aesthetic impact by some people. These temporary construction activities would take twelve to sixteen days annually and be visible from Green Valley Road. In addition, no mature trees in the riparian zone would be removed. The largest tree removed would be an Oregon ash with a dbh of 11 inches.

Project's BMPs identified below and described in Table 2 would avoid or minimize visual impacts during maintenance.

- BMP GEN-2: Staging and Stockpiling of Materials
- BMP GEN-3: Channel Access
- BMP BR-1: Area of Disturbance
- BMP GN-1: Work Site Housekeeping
- BMP VEG-2: Planting and Revegetation After Soil Disturbance

Because project activities would be short-term and visual disruptions along scenic corridors would be temporary, there would be no substantial or long-term degradation of the scenic resources as viewed by the various viewer groups. This impact would be less than significant. No mitigation is required.

**d. Adverse effect on daytime or nighttime views in the area – *No Impact.***

Project activities would be conducted during daylight hours only, thus no nighttime lighting would be needed. The 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.

## 4.2 Agriculture and Forestry Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the Project:	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 nonagricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion of Potential Impacts

#### **a-e. Conflicts or Loss of Agricultural or Forest Lands — *Less-than-significant impact***

All of the project activities would take place within Green Valley Creek and along the immediate top of bank and would not affect agricultural or forest lands. There would be two mature Oregon Ash trees with a dbh of 7 and 11 inches, and an additional 12 immature Oregon ash saplings, would be removed. These riparian trees are not typical timber harvest species and the riparian zone in the project area is expected to regenerate and would not be changed to another land use. Also, no trees would be affected at the storage, disposal, and staging areas. No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, forest lands, or lands under a Williamson Act contract would be converted by, or conflict with, the Proposed Project's activities. The project area is identified as Farmland of Local Importance (California Department of Conservation 2017); however, Green Valley Creek is not a farmable area. Rather, the Proposed Project is likely to contribute to a long-term benefit to agriculture adjacent to the creek by reducing local flooding and improving channel stability.

### 4.3 Air Quality

When available, the significance criteria established by the applicable air quality management 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### Discussion of Potential Impacts

##### **a, b. Conflicts with or Violates Applicable Air Quality Plans or Standards — *Less than Significant***

The Proposed Project area is located within northern Sonoma County and the North Coast Air Basin (NCAB) and is the jurisdiction of the Northern Sonoma County Air Pollution Control District (NSCAPCD). The NSCAPCD is responsible for attaining and maintaining the National and California Ambient Air Quality Standards (NAAQS and CAAQS) in the NCAB. NCAB encompasses Del Norte, Humboldt, Trinity, and Mendocino counties, as well as the northern portion of Sonoma County.

Criteria air pollutants include ozone (O<sub>3</sub>), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), and others. The California Environmental Protection Agency's Air Resources Board (CARB) and the U.S. Environmental Protection Agency (EPA) focus on these criteria air pollutants as indicators of ambient air quality because they are the most prevalent air pollutants known to be harmful to human health. Standards have been set for these pollutants to protect public health and welfare.

Ozone, also called smog, is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between reactive organic gases (ROG) and Oxides of Nitrogen (NO<sub>x</sub>) in the presence of sunlight. Nitric oxide (NO) and nitrogen oxide (NO<sub>2</sub>) are the primary compounds produced. Nitrogen oxides (NO<sub>x</sub>) can produce a brown haze that is visible in the atmosphere. Warm, windless, sunny days result in the highest ozone levels. The main sources of NO<sub>x</sub> and ROG, also referred to as ozone precursors, are combustion processes such as motor vehicle engines. Other sources include evaporation of solvents, paints, and fuels, and biogenic sources.

Particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) refers to a wide range of solid or liquid particles in the atmosphere that come from a variety of stationary, mobile, and natural sources. Power production, cement manufacturing, combustion, fireplaces, diesel trucks, and forest fires are all sources of particulate emissions. Particulate matter includes dust, smoke, aerosols, and metallic oxides. Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM<sub>10</sub>. A subgroup of PM<sub>10</sub> with an aerodynamic diameter of 2.5 micrometers or less is referred to as PM<sub>2.5</sub>. Some particulate matter, such as pollen, occurs naturally.

Carbon monoxide (CO) comes from motor vehicles as well as the burning of wood for fuel and heat in residential homes. State and federal controls on new motor vehicles and voluntary efforts to reduce wood burning have been implemented to prevent CO from reaching adverse levels.

California's ambient air monitoring network includes over 250 sites where air pollution levels are monitored. There are generally more monitoring sites in areas with reduced air quality and greater population. Ambient concentration data are collected for a wide variety of pollutants, including ozone, particulate matter, and several toxic compounds. Each monitoring site, however, only monitors for pollutants that are elevated in that area (CARB 2015).

The NSCAPCD operates a network of monitoring stations that monitor ambient concentrations of ozone and PM<sub>10</sub>. NSCAPCD monitoring stations in Sonoma County include locations in Guerneville, Healdsburg, and Cloverdale. Guerneville is the closest station to the project area. Within the last five years, two days have exceeded California

standards for PM<sub>10</sub> at the Healdsburg air quality monitoring station as shown in Table 7 below.

**Table 7: Days exceeding standard for ozone and particulate matter detected by NSCAPCD Sonoma County monitoring stations.**

	Standard <sup>a</sup>	Number of Days Exceeding Standard				
		2012	2013	2014	2015	2016
<b>Ozone (O<sub>3</sub>)<sup>b</sup></b>	<b>CAAQS (1-hr avg. 0.09 ppm)</b>	0	0	0	0	0
	<b>CAAQS (8-hr avg. 0.070 ppm)</b>	0	0	0	0	0
	<b>NAAQS (8-hr avg. 0.070 ppm)</b>	0	0	0	0	0
<b>Respirable Particulate Matter (PM<sub>10</sub>)</b>	<b>CAAQS 24-hr (50 µg/m<sup>3</sup>)</b>	0	1 <sup>c</sup>	0	1 <sup>c</sup>	0
	<b>NAAQS 24-hr (150 µg/m<sup>3</sup>)</b>	0	0	0	0	0

Source: CARB. Available at <https://www.arb.ca.gov/adam/topfour/topfour1.php>. Accessed February 21, 2018.

<sup>a</sup> CAAQS - California Ambient Air Quality Standards; NAAQS – National Ambient Air Quality Standards; ppm – parts per million; µg/m<sup>3</sup> – microgram per cubic meter.

<sup>b</sup> Ozone (O<sub>3</sub>) available at Healdsburg station only.

<sup>c</sup> Exceedance at Healdsburg station.

The air basin in which the Proposed Project would be located is in attainment, or within standards, for most criteria pollutants. The portion of the NCAB within the jurisdiction of the NSCAPCD is considered to be in attainment or unclassified for all NAAQS and CAAQS, therefore the NSCAPCD is not required to have an Air Quality Plan.

The Proposed Project is within the jurisdiction of the NSCAPCD and would not conflict with implementation of any applicable air quality plan. The Proposed Project would result in emissions related to construction, operation, and maintenance activities.

In order to estimate emissions from construction-related activities, CARB emissions factors (EMFAC 2014) were used to estimate transportation-related emissions and the CARB's Off Road 2010 emission factors were used to estimate emissions from construction equipment. According to CARB, the average age of California's tractors, loaders, and backhoes is 10.0 years and the average age of excavators is 9.2 years; therefore, emission rates for construction equipment were chosen based upon the

assumption that construction equipment used would be approximately 10 years old (CARB 2010 Off-Road).

Use of vehicles and off-road equipment, such as wood chippers and excavators, for maintenance activities would generate emissions of criteria air pollutants. Fuel combustion involved with vehicle use and operating off-road equipment would release particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>) and other contaminants associated with motor vehicle operation, including carbon monoxide and ozone precursors (ROG and NO<sub>x</sub>).

The Proposed Project would require use of a variety of vehicles (light- and heavy-duty pickups and an excavator) and equipment (such as chain saws and wood chippers). Work would only be conducted between August 1 and October 15 for a duration of approximately 16 weekdays per year. Typical construction activity would consist of three to four light-duty/passenger trucks and five to seven heavy-duty trucks/construction machinery such as chipper truck, dump truck, loader, excavator and/or skid steer. Up to 35-40 vehicle trips would occur per day during Project-related activities. The majority (seventy to eighty percent) of Project-related vehicles trips would involve dump trucks moving excavated creek sediment to the permanent disposal area at the Water Agency's Mirabel Facilities (Figure 6), approximately 8.8 miles (17.6 miles roundtrip) from the Project site.

Criteria for air pollutant emissions estimated for Project construction and maintenance activities are summarized in Table 8 below and compared to NSCAPCD annual operational thresholds as there are no proposed construction emission thresholds for the NSCAPCD. Calculations are provided in Appendix C. Criteria air pollutant emissions related to construction and maintenance of the Proposed Project would fall well below existing and proposed thresholds for the NSCAPCD. This is considered a less-than-significant impact and no mitigation is required.

**Table 8: Project emissions compared to NSCAPCD annual thresholds for operation.**

<b>Pollutant</b>	<b>Threshold</b>	<b>Project Emissions (tons per year [tpy])</b>	<b>Above Threshold?</b>
<b>ROG</b>	40	0.01	NO
<b>NO<sub>x</sub></b>	40	0.44	NO
<b>PM<sub>2.5</sub></b>	10	0.00	NO
<b>PM<sub>10</sub></b>	15	0.01	NO
<b>CO</b>	100	0.14	NO

**c. Cumulatively Considerable Net Increase of Any Criteria Pollutant for Which the Project Region is a Nonattainment Area — *No Impact*.**

As described above in Items a and b, the air basin in which the Proposed Project would be located is in attainment, or within standards, for most criteria pollutants. Therefore, there would be no impact and no mitigation is necessary.

**d. Expose Sensitive Receptors to Substantial Pollutant Concentrations — *No Impact***

Sensitive receptors within the project area that would be exposed to emissions of criteria air pollutants include only sparse rural residences in the project vicinity. As determined above in Items a and b, the Proposed Project activities would not expose nearby residential areas to substantial pollutant concentrations. There are no schools, hospitals or health care facilities nearby.

**e. Create Objectionable Odors — *Less than Significant***

Channel excavation is the only proposed activity with the potential to generate objectionable odors. Exposed soils from stream channels may contain high levels of organic material or reduced sulfur, which could generate temporary and localized odors.

As the Proposed Project's excavation activities would occur infrequently and the Project is located in a rural area, the number of people exposed to odor from any event would be small and the duration of exposure would be temporary and short. Therefore, the Proposed Project is not considered to have the potential to generate substantial annoyances from odors to sensitive receptors. This is considered a less-than-significant impact. No mitigation is necessary.

## 4.4 Biological Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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 (HCP), Natural Community Conservation Plan, or other approved local, regional, or state HCP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion of Potential Impacts

#### **a. Substantial Adverse Effect, Either Directly or Through Habitat Modifications, on Any Species Identified as a Candidate, Sensitive, or Special Status Species — *Less than Significant***

The potential for special status species to occur in project area was evaluated according to the following criteria: No Potential, Low, Moderate, and High. Please see Appendix B, Tables B-1 through B-3 for species and details. A discussion of the Project’s potential effects on special status species is provided below.

#### ***Potential Impacts to Special Status Species***

Based on review of databases and other information sources, 51 special status plant and animal species have been documented as occurring or potentially occurring in the vicinity of the project and have varying potential for occurrence within the habitats present in the project area (Tables A-1 through A-3). There are 40 special status species (30 plants and 10 animals) that have low or no potential to occur because their required habitat is not present in the project area, including all special status plant species. Examples include green turtle that is a marine species and several plant species that are endemic to dry serpentine environments.

There are 11 fish and wildlife species that have a moderate to high potential to occur in the project area. Three bat species with a moderate potential to occur may roost in riparian trees along the historic channel or beneath the Green Valley Road Bridge and forage for insects over the project area. The remaining eight species have a high potential to occur in the project area and are associated with aquatic habitats of Green Valley Creek. During emergency flood control work in March 2017 the endangered California freshwater shrimp, endangered coho salmon, and threatened steelhead were found in the project area. There are three sensitive species that are known from Green Valley Creek and have a high potential to occur in the project area, including Chinook salmon,



foothill yellow-legged frog, and western pond turtle. The California giant salamander and California red-legged frog have been reported from nearby watersheds and suitable habitat is present in the project area.

The Proposed Project's ground-disturbing activities, including high flow channel excavation, active channel sediment removal maintenance, and blackberry removal along the historic channel, have the potential to impact the 11 special status animals or degrade their habitat if they are present in work areas. However, the project activities may also benefit special status species by reducing erosion during flood events, preventing fish and wildlife strandings, and enhancing habitats.

The Proposed Project includes several measures to avoid and minimize impacts to common native species and habitats, as well as special status species. Although unlikely to occur in the project area, pre-construction surveys by a qualified botanist will be conducted to determine if special status plants are present (Table 2; BR-6). The Proposed Project would further minimize potential impacts to native habitats with BMP GEN-2 (Staging and Stockpiling of Materials), BR-1 (Area of Disturbance), BR-2 (Pre-Maintenance Educational Training), and BR-3 (Common Fish and Wildlife). These actions would minimize disturbance to habitats during construction activities.

Disturbance to nesting birds would be avoided by conducting construction outside of the nesting season or minimized by conducting nesting migratory bird and raptor pre-construction surveys (Table 2, BR-4). If nesting birds are found, a buffer will be established around the nest and maintained until the young have fledged or work postponed until a nest is no longer active.

Potential injury to common and special status fish and aquatic wildlife species would be avoided. Pre-construction surveys would be completed to identify if animals are in the work area (BR-3), including aquatic species and evidence of bat activity at the bridge and in large riparian trees. Aquatic habitats in the construction area would be isolated with coffer dams and netting. Aquatic animals would be relocated out of the project area to nearby suitable habitat along Green Valley Creek (BR-7).

Several hazardous materials safety BMPs (Table 2, HAZ-1 through HAZ-7) would be implemented to reduce adverse impacts to biological resources from project activities. These actions would avoid and minimize the potential for degradation of habitat or direct impacts due to the accidental release of fuels and lubricants by preventing spills from occurring and quickly responding if a spill does occur.

The Proposed Project would avoid potentially significant impacts to special status fish and wildlife species by avoiding occupied habitat by constructing during the dry season, avoiding aquatic habitats when possible, and relocating animals out of the project area

when necessary. Also, several actions would benefit aquatic species and their habitat including reducing fish and wildlife strandings from uncontrolled flooding, maintenance of overhanging blackberry, creation of aquatic habitat along the high flow channel, wetland plantings, and reduced sedimentation of aquatic habitats downstream (see Table 1). Therefore, this impact would be less than significant, and no mitigation is required.

**b. Have a Substantial Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community — *Less than Significant***

The Proposed Project activities occur in sensitive natural communities including riparian habitat, freshwater wetlands, and aquatic habitat. The historic channel would be disturbed during construction by the temporary installation of an access ramp. In-channel blackberry and debris jams would be removed to improve conveyance of flood waters. Also, mature riparian trees may be trimmed, but not removed, to allow for equipment access. The largest tree to be removed would be an Oregon ash with a dbh of 11 inches. Excavation of the high flow channel would create aquatic habitat within existing nonnative blackberry scrub habitat and may benefit aquatic species. Annual maintenance activities, including sediment removal along the active and high flow channels, to return channels to flood capacity design would likely result in temporary impacts to sensitive natural communities. However, permanent impacts (i.e., reduction in the extent or quality of a sensitive natural community) are not anticipated to occur. Without regular sediment removal, aquatic habitat along these two channels, and in Green Valley Creek downstream, would likely degrade from continued accumulation of sediment. Also, the Proposed Project would benefit riparian and wetland habitats by installing native plants along the active and high flow channels. The Proposed Project would have a less than significant or potentially beneficial to sensitive natural communities, including riparian habitat.

**c. Substantial Adverse Effects on Federally Protected Wetlands — *Less than Significant***

Project activities would largely avoid impacts to Section 404 CWA jurisdictional wetlands. However, construction and annual maintenance activities, including temporary access ramp in the historic channel, excavation of the high flow channel (a portion of the alignment is within jurisdictional wetlands), and sediment removal during channel maintenance would temporarily disturb jurisdictional wetlands. The discharge of fill from project activities would not result in conversion of wetland type; however, some temporary loss of wetland function may occur during the re-establishment of wetland vegetation. No existing wetlands would be lost and there would be an overall net increase in wetland area from the construction of the high flow channel.

Proposed Project activities are not likely to result in the permanent reduction of wetland area, substantial conversion of wetland type, or a significant permanent decline in functions and values. Adverse effects are anticipated to be temporary. Channel creation and wetland plantings implemented as part of the Proposed Project are likely to increase the area and have a beneficial effect to Section 404 CWA jurisdictional wetlands. Therefore, this impact would be less than significant, and no mitigation is required.

**d. Substantial Interference with Wildlife Movement, Established Wildlife Corridors, or the Use of Native Wildlife Nursery Sites — *Less than Significant***

The Proposed Project would retain riparian and aquatic habitats in the project area that may be used for migration and movement by fish and wildlife, although temporary impacts may occur during construction and maintenance activities. Construction during the dry season when creek flow is low would avoid the spawning and migration period of fish, including listed salmon species. Sediment removal along the active and high flow channels are expected to improve passage for migrating fish and reduce strandings during flood events. The Proposed Project has several measures to minimize adverse impacts to the movement of native fish and wildlife species (Table 2), including BMP GEN-1 (Work Window), BR-1 (Area of Disturbance), BR-2 (Pre-Maintenance Educational Training), and BR-5 (On-Call Wildlife Biologist). By implementing these BMPs, impacts to fish and wildlife movement and migration would be avoided or sufficiently minimized such that adverse impacts are not likely to occur. Also, the mature riparian forest along the historic channel that may be used as a migration corridor would be maintained. Therefore, this impact would be less than significant, and no mitigation is required.

**e. Conflicts with Local Policies or Ordinances Protecting Biological Resources — *No Impact***

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 Sec. 26-65-040 of the ordinance including “stream maintenance and restoration carried out or overseen by the Sonoma County Water Agency.” The Proposed Project 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 not affect any protected oak trees.

Proposed Project activities would not significantly impact riparian resources or valley oak trees or conflict with local policies or protected by county ordinances. No mitigation is required.

**f. Conflict with the Provisions of an Adopted HCP, Natural Community Conservation Plan — *No Impact***

There are no Habitat Conservation Plans or Natural Community Conservation Plans (NCCP) located within project area (CDFW 2017, USFWS 2017). Therefore, the Proposed Project activities would not impact an HCP or NCCP and no mitigation is required.

## 4.5 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 as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion of Potential Impacts

#### **a,b,c,d. Adverse Change in Significance of Historical or Archaeological Resources — *Less than Significant***

As described in the Project Background (Section 1.0 above), the project site includes areas within the Green Valley Creek corridor that have been previously disturbed by sediment removal activities. The Proposed Project would include excavation of aggraded creek sediments, some of which will have been deposited as recently as March 2017.

Tom Origer and Associates conducted an onsite assessment and archival records search for the Proposed Project location and submitted a summary of the results and recommendations on February 23, 2018 (HRS 2018). The site assessment and record search did not identify any historical resources, archeological resources, unique paleontological resources or geological features, or human remains within the Project area and no impact is anticipated.

However, excavation of sediment from the channels during project construction has the potential to expose and affect subsurface cultural resources that were not visible or identified during the archival records search for the project. To further minimize and avoid

potential impacts to unknown cultural resources, activities would incorporate the use of BMPs, as defined in project description and specifications (Table 2). For example, prior to initiation of ground-disturbing activities, BMP CR-1 would require the Water Agency to provide education training for maintenance crews about the kinds of cultural materials that could be present at the project site and the protocols to be followed should any such materials be uncovered during construction. Training shall be conducted by 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) (qualified professional archeologist).

BMP CR-1 would also require that if discovery is made of items of historical, archaeological or paleontological interest, all work activities would immediately cease in the area of discovery. Work would not resume until a qualified professional archaeologist meeting the U.S. Secretary of Interior's professional standards has evaluated the significance of the item(s). 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, a research design and excavation plan would be prepared and implemented prior to work resuming. BMP CR-1 also includes compliance with Public Resources Code 5097.98 and Health and Human Safety Code 7050.5, pertaining to the discovery of human remains. These practices and procedures protect cultural resources by avoiding or minimizing potential adverse impacts during construction activities. Therefore, potential effects on cultural resources would be less than significant. No mitigation is necessary.

## 4.6 Geology and Soils

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the Project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion of Potential Impacts**

**a, b, c. Exposure of People or Structures to Adverse Effects Associated with Seismic Activity, Landslide, Erosion, or Location on Unstable Soils — *Less than Significant***

The Proposed Project area would be subject to ground shaking as a result of earthquake activity on any of a number of faults in the region. Maximum ground accelerations and other earthquake induced hazards could be sufficient to damage the project area. The potential for liquefaction exists on the sediment bars in the project area. However, the Proposed Project does not propose to create any structures which would be permanently or temporarily occupied. The proposed activities (vegetation removal, channel excavation, and habitat restoration) would not substantially affect, or be affected by, risks related to seismic events or other geologic hazards. In the long-term, the proposed sediment removal and habitat restoration would have beneficial effects on potential erosion and sedimentation. Sediment removal along channels would reduce off-channel erosion during flood events. Therefore, this impact is less than significant, and no mitigation is required.

**d. Located on expansive soils — *No Impact***

The Proposed Project area contains alluvium material composed of sand and gravel, which have a low shrink/swell potential. Therefore, this impact is less than significant, and no mitigation is required.

**e. Support of Septic Tanks or Alternative Wastewater Disposal Systems — *No Impact***

The Proposed Project would not result in the generation of wastewater, nor involve the construction or modification of any septic tanks or alternative wastewater disposal



systems. As such, the Proposed Project would have no impact associated with placement of such systems on unsuitable soils in the project area.

## 4.7 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion of Potential Impacts

#### a. Generation of greenhouse gas emissions that may have a significant impact on the environment — *Less than Significant*

The NSCAPCD currently does not have adopted greenhouse gas (GHG) thresholds of significance for CEQA review projects. Therefore, to determine impacts associated with GHG emissions, the NSCAPCD recommends use of the Bay Area Air Quality Management District (BAAQMD) guidelines. BAAQMD's approach to the determination of significance of GHG emissions is based on the BAAQMD's 2010 Air Quality Guidelines operational significance threshold of 1,100 metric tons (MT) carbon dioxide equivalent (CO<sub>2e</sub>) per year for projects that are not stationary sources (BAAQMD 2010). There are no adopted thresholds for construction emissions; however, the NSCAPCD recommends a case-by-case consideration of construction GHG emissions and encourages lead agencies to incorporate BMPs to reduce GHG emissions during construction. This impact analysis estimates GHG emissions that would be emitted during project construction and then compares them to BAAQMD's 2010 Guidelines operational significance thresholds. Since there are no construction-related thresholds to apply, construction-related emissions are treated as operational emissions and compared to BAAQMD's operational threshold of 1,100 MT CO<sub>2e</sub> per year (Table 9).

In order to estimate greenhouse gas emissions, the default emission factors consistent with the Climate Registry Protocol Version 2.1 were used (Climate Registry 2016). The Proposed Project would result in a total GHG emission of approximately 30.66 MT CO<sub>2e</sub> per year.

**Table 9: Project greenhouse gas emissions compared to operational thresholds.**

<b>BAAQMD Operational Threshold (MT CO<sub>2</sub>e/year)</b>	<b>Estimated Project Emissions (MT CO<sub>2</sub>e)</b>	<b>Above Threshold?</b>
1,100*	30.66	No

\*Northern Sonoma County Air Pollution Control District relies upon Bay Area Air Quality Management District (BAAQMD) thresholds for GHG emissions.

Project-related GHG emissions are well below BAAQMD’s 2010 Guidelines operational significance threshold of 1,100 MT CO<sub>2</sub>e per year for projects that are not stationary sources. Therefore, the Proposed Project would have a less than significant on generation of GHG emissions, either directly or indirectly, that may have a significant effect on the environment.

**b. Conflicts With, Plans or Policies to Reduce Greenhouse Gas Emissions — *Less than significant Impact***

*Sonoma County Regional Climate Action Plan*

On July 11, 2016, the Regional Climate Protection Authority (RCPA) adopted the Sonoma County Regional Climate Action Plan: ‘Climate Action 2020 and Beyond’ (CAP). The regional framework creates an efficient and consistent approach to address climate change but allows local governments to adopt locally appropriate measures to reduce GHG emissions. However, the Environmental Impact Report (EIR) for the CAP was successfully challenged and overturned in court in July 2017. Currently the RCPA has no plans to challenge the court decision and local jurisdictions cannot formally adopt the CAP, but can rely on it as a guidance document for measures to reduce GHG emissions (SCRCAP 2017).

*Sonoma County General Plan 2020*

The Sonoma County General Plan 2020 does not contain any goals or policies related to GHG emissions relevant to the Proposed Project (SCPRMD 2008).

The Proposed Project does not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG. The County of Sonoma does not currently have an adopted plan to reduce GHG emissions. As discussed in item 4.7a, above, the Proposed Project would result in temporary GHG emissions that are below BAAQMD thresholds.

## 4.8 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. For a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the study area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
f. For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion of Potential Impacts

#### **a, b. Creation of Hazard Through Transport, Use or Disposal of Hazardous Materials — *Less than Significant***

The Proposed Project's activities would involve the use of fuels and lubricants for equipment. If these materials were released into the water or ground during application or equipment refueling or maintenance, contamination and harm to people could result. These hazardous materials would be transported to and from the project area and would be removed once the project is complete. Hazardous materials would not be permanently stored onsite. The Proposed Project would minimize or avoid the use or transport of hazardous materials by implementing several containment and preventative actions (Table 2; HAZ-1 through -6). This impact is less than significant, and no mitigation is required.

#### **c. Generation of Hazardous Emissions/ Use of Hazardous Materials Within 0.25 Mile of Schools — *No Impact***

The Proposed Project would involve transport and use of small quantities of fuels and lubricants for construction equipment use, which may be hazardous. The Proposed

Project would restrict and contain the use of hazardous materials (Table 2; HAZ-1 through -6). There are no schools located within 0.25 mile of project area. Therefore, there would be no impact to local schools and no mitigation is required.

**d. Location on Listed Toxic Site, and Related Impacts — *No Impact***

A search for existing known contaminated sites in the project area on the State Water Resource Control Board's GeoTracker database (SWRCB 2017) was conducted. No contaminated or remediation sites are located in the vicinity of the project area.

**e, f. Located in the Vicinity of a Public or Private Airstrip — *No Impact***

Public airports in the project area consist of Sonoma County Airport located approximately 5 miles northeast of the project area. Proposed Project activities would not interfere with airport operations, would not involve the use of any equipment that would affect aircraft utilizing any airports in Sonoma County, and would not result in a substantial safety hazard to people residing or working in vicinity of airports. Therefore, there would be no impact and no mitigation is required.

**g. Interference with Emergency Response or Evacuation Plan — *Less than Significant***

During construction activities infrequent road closures, including delays and detours, may be necessary. If road closures or traffic generated by activities (such as hauling of disposal materials) were to interfere with emergency response measures such that response times were extended, a significant impact would result. However, the Proposed Project would ensure that temporary lane closures are avoided or minimized and coordinated with local emergency response agencies to plan for alternative access routes and that haul routes consider level of service (LOS) and existing traffic (Table 2, GN-3). Also, the Proposed Project's goal of reduced flooding across Green Valley Road will reduce road closures and maintain emergency service access. The Proposed Project would have a less-than-significant impact on emergency response or evacuations during construction and a long-term beneficial impact by reducing road closures from flooding. No mitigation is required.

**h. Exposure of People or Structures to Risk of Wildland Fires — *Less than Significant***

Proposed Project activities would not involve placement of people or habitable structures in areas without adequate fire protection. Additionally, proposed activities would not result in the creation of new wildland areas that could increase fire dangers. However, because construction activities would be conducted during the dry summer months when fire danger is the highest there is a potential for an accidental ignition of a wildland fire.

The Proposed Project would include fire prevention, which requires on-site fire suppression equipment, spark arrestors on all equipment with internal combustion engines, and restricts activities on high fire danger days to reduce the risk of fire (Table 2, HAZ-7). Therefore, this impact would be less than significant, and no mitigation is necessary.

## 4.9 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on site or off site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-site or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
f. Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j. Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion of Potential Impacts

#### **a, c, f. Violation of Water Quality Standards or Waste Discharge Requirements, Erosion and Siltation Impacts Related to Alteration in Existing Drainage Patterns, Other Degradation of Water Quality — *Less than Significant***

The Proposed Project would avoid or minimize accidental releases of sediment and contaminants during ground disturbance, such as isolation of the work area with coffer dams and erosion protection, that could impact water quality by implementation of BMP GEN-2 Staging and Stockpiling for Materials, HAZ 1- 6 (hazardous materials use and management), VEG-2, Planting and Revegetation After Soil Disturbance, and WQ-1 Apply Erosion Control Fabric to or Hydroseeding of Exposed Soils (Table 2). No violation of water quality standards or waste discharge requirements is anticipated. Also, it is anticipated that erosion protection activities will have a long-term beneficial effect on hydrology and water quality. Impacts are considered less than significant, and no mitigation is required.

**b. Effects on Groundwater Supply or Recharge — *No Impact***

Proposed Project activities would not affect existing groundwater wells and pumping facilities, and no new wells or pumps would be installed as part of the project. The proposed activities would not involve any actions that would substantially deplete groundwater supplies or affect the aquifer volume or groundwater table level.

**d, e, h. Runoff and Flooding Impacts Related to Alteration in Existing Drainage Patterns, Effects on Capacity of Existing or Planned Storm water Drainage Systems, Potential to Increase Flooding Hazards — *Less than Significant***

The Proposed Project's purpose is to reduce the flood risk along Green Valley Creek by increasing the capacity of the existing creek to accommodate floodwaters. A geomorphic assessment concluded that the Proposed Project would increase conveyance of flood waters through the project area and reduce flooding and overtopping of Green Valley Road (SCWA 2018). But, the gains in conveyance may be limited by the channel downstream of Green Valley Road bridge (downstream of the project area), which would still lack the capacity to effectively convey large flood flows. Overall, the effects of the Proposed Project would reduce the risk of flooding and may benefit storm water drainage systems. No mitigation is required.

**g. Place housing within 100-year flood hazard — *No Impact***

The Proposed Project does not include building housing.

**i. Flood risk from dam or levee failure — *No Impact***

The Proposed Project does not include the construction of dams or levees. Also, there are no dams or levees in the project area.

**j. Potential to Contribute to Seiche, Tsunami, and Mudflow Hazards — *No Impact***

The Proposed Project area is inland from the coast and is outside the influence of large water bodies. Consequently, seiche or tsunami events could not influence the project area. Upstream of the project area are hillsides that may be prone to mudflows. However, project activities would not increase the potential for mudflows to occur. Therefore, no impact related to seiche, tsunami, mudflow risks is anticipated. No mitigation is required.

## 4.10 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion of Potential Impacts

#### a. 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. No mitigation is required.

#### b. Conflicts with Land Use Plans or Policies — *No Impact*

The Proposed Project activities would not result in new development and land would not be altered from its present use. Although temporary impacts are associated with the Proposed Project, maintenance activities would improve the quality and condition of habitat within Green Valley Creek. Over the long-term, implementation of the Proposed Project would protect existing development and land uses by maintaining water conveyance capacity and providing enhanced riparian and instream habitat in the project area. Achieving these objectives would support existing land use plans and would not result in incompatibilities with existing and adjacent land uses. The Proposed Project would not impact any land use plan and no mitigation is required.

**c. Conflicts with Habitat Conservation Plans — *No Impact***

The Proposed Project's BMPs (Table 2) were developed to protect the riparian and aquatic resources along Green Valley Creek. These BMPs would avoid or minimize disturbance to wetland and aquatic habitats, common fish and wildlife, nesting birds, and special status species. Project activities would increase aquatic habitat and enhance the existing riparian corridor.

The Proposed Project activities would not occur within the boundaries of any existing or proposed habitat conservation plans. Therefore, there would be no impact related to conflict with an adopted or proposed conservation plan. No mitigation is required.

## 4.11 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion of Potential Impacts

#### a, b. Loss of Availability of Mineral Resources — *No Impact*

There are no instream mining or mineral resource areas in project area. The Proposed Project would not involve any activities that could directly affect mineral production sites. There would be no impact. No mitigation is required.

## 4.12 Noise

Would the Project result in:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in a local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. For a project located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion of Potential Impacts

**a. Exposure to Noise Levels in Excess of Local or County Standards — *Less than Significant***

There is currently no Sonoma County noise ordinance. The Sonoma County General Plan 2020 (PRMD 2008) contains the following: Policy NE-1i: County equipment and vehicles shall comply with adopted noise level performance standards consistent with the best available noise reduction technology. Also, the General Plan provides guidance for reviewing new permanent projects and new transportation projects, but does not address temporary construction noise.

The Proposed Project is located in an unincorporated area west of Graton, California and is not under a noise ordinance. Heavy equipment would be needed for construction activities, though use would be temporary and localized. Typical heavy equipment and noise levels at 50 feet is an excavator with a noise level of 85 dBA (A-weighted decibel, a measurement of sound), dump truck at 84 dBA, and grader at 85 dBA (USDOT 2006). For reference a power lawnmower has a noise level of 90 dBA.

Noise from the Proposed Project would be minimized by the limited scale of construction/maintenance activities that would typically not exceed more than twelve to sixteen days per year. Maintenance scheduling would restrict noise to weekday business hours (Table 2, BMP GN-2). Construction noise would comply with county policy. Therefore, there would be a less-than-significant impact. No mitigation is required.

**b. Exposure to Excessive Groundborne Vibration or Noise — *No Impact***

Activities under the Proposed Project would not include impact construction (i.e. pile driving or other equipment), which produce ground-borne vibrations. Therefore, there would be no impact and no mitigation is required.

**c. Permanent Substantial Increase in Ambient Noise Levels — *No Impact***

The Proposed Project's activities would be temporary and would not involve or create any permanent noise sources. There would be no permanent increase in ambient noise levels as a result of implementation of the Proposed Project. There would be no impact and no mitigation is required.

**d. Substantial Temporary Increases in Ambient Noise Levels — *Less than Significant***

Project activities would result in temporary increases in noise as discussed above in Item a. However, as described, noise from maintenance activities would be short-term, intermittent, and would not occur during the evening hours, on weekends, or on holidays. As such, this impact would be less than significant, and no mitigation is required.

**e-f. Exposure to Excessive Noise Levels in an Airstrip or Airport Land Use Area —  
*No Impact***

The Proposed Project is not located within or near an airport land use area or the vicinity of a private airstrip. Therefore, people residing or working in the project area would not be exposed to noises associated with an airstrip or airport land use area. There is no impact and no mitigation is required.



### 4.13 Population and Housing

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion of Potential Impacts

##### **a. Induce Population Growth — *No Impact***

The Proposed Project would not involve new development or infrastructure installation that could directly or indirectly induce population growth in the area, nor would the Proposed Project create the demand for additional housing. As such, the Proposed Project would have no impact on population growth and no mitigation is necessary.

##### **b, c. Displace Population or Housing — *No Impact***

The Proposed Project would consist of flood control activities and not involve the construction or development of additional infrastructure. As such, the Proposed Project would not displace any existing housing units or persons. There would be no impact and no mitigation is necessary.

#### 4.14 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 following public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion of Potential Impacts

##### a1. Effects on Fire, Police, and Emergency Services — *Less than Significant*

The Proposed Project would not increase the population in the project area nor would it alter the existing population distribution temporarily or permanently. As such, the Proposed Project would not increase demand for fire, police, or emergency services as a result of population growth.

The Proposed Project's effect on police, fire, and emergency services response times and access would be minimal during construction and maintenance. Details of traffic effects during construction can be found in Section 4.16 Transportation/Traffic. This impact is less than significant, and no mitigation is required.

##### a2. Other Services or Facilities — *No Impact*

The Proposed Project does not consist of any activity that would affect the demand for public services or facilities. Project activities would be short in duration and small in scale. These activities directly reduce the flood hazard, which, if not maintained, could negatively affect the operation of public facilities. Therefore, the Proposed Project would have no impact on these resources and may have beneficial effects from flood control activities. No mitigation is required.

## 4.15 Recreation

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion of Potential Impacts

#### a. Increase Use of Existing Parks or Recreational Facilities — *No Impact*

As noted in Section 4.13 Population and Housing, the Proposed Project would not result in population growth. As such, the Proposed Project would have no impact on recreational demand related to population growth. No mitigation is required.

#### b. Creation of New or Altered Recreational Facilities — *No Impact*

The Proposed Project would not create any new recreational facilities. Also, project activities would be conducted on private property that is not open to the public for recreation. Thus, there are no potential effects on recreational facilities, and no mitigation is required.

## 4.16 Transportation and Traffic

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
f. Conflict with adopted policies, plans, or programs supporting alternative transportation or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Discussion of Potential Impacts**

**a, b. Conflict with Traffic Circulation and Congestion Plans — *Less than Significant***

Construction and maintenance of the proposed project would generate additional vehicle trips associated with construction workers, construction equipment and material-related deliveries, and spoils disposal. The Proposed Project’s effect on traffic in the project area would be limited to short-term effects during project implementation. Project-related traffic would consist primarily of commutes to and from worksites by workers and periodic delivery and removal of materials during the construction and maintenance period. The number of maintenance workers and vehicles would vary by project activity. A typical activity would consist of a heavy equipment vehicle transported on a truck, two to three dump trucks transporting excavated sediments, and three or four light-duty vehicles to transport staff and materials.

The majority (70 to 80 percent) of the Proposed Project’s effects on traffic would be related to transportation of excavated sediments to the permanent stockpile (disposal) area at the Water Agency’s Mirabel Facilities. Access to the disposal area would include travel on Green Valley Road, Highway 116, Mirabel Road, River Road, Wohler Road, Westside Road and Water Agency owned-private roads (Figure 6). The expected increase in traffic on these roads would take place between the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday and on weekends as necessary. The estimated increase in trips along these roads related to daily spoil-disposal would be approximately 28-29 round trips per day during project implementation. This increase in daily traffic during project implementation represents an increase of approximately five percent over Westside Road’s annual average daily traffic volume of 1,115 vehicles. Westside Road is the road with the lightest existing average daily traffic that would be utilized to transport spoils to the permanent disposal area as shown in Table 10.

**Table 10. Average daily traffic for roads that would be used to transport spoils.**

<b>Road (Postmile)</b>	<b>Average Daily Traffic Volumes</b>
CA-116, at Mirabel Road (19.39)	5,400
Green Valley Road, at project site (15.58)	1,733
Mirabel Road (10.90)	6,909
River Road, at Mirabel Road (17.32)	13,719
Westside Road, 0.5-miles north of Wohler Road intersection (13.57)	1,115
Wohler Road (11.45)	1,143

Sources: SCDTPW 2018, Caltrans 2016.

Project activities could include the physical encroachment into the adjacent Green Valley Road. Where insufficient widths for both maintenance vehicles and regular traffic occur, temporary closing or narrowing of lanes may be necessary to conduct maintenance activities, such as active channel excavation along Green Valley Road or at the Green Valley Road bridge over Green Valley Creek.

The Proposed Project would minimize temporary disturbance to traffic and maintain two-way traffic on Green Valley Road (Table 2, GN-3). If lane closures or traffic delays cannot be avoided, advance notice of road closures would be given to the appropriate jurisdictions and emergency service providers, and adequate warning and detour signs and flaggers will also be provided to safely guide travelers during maintenance activities.

The Proposed Project's temporary effects from changes in local traffic conditions on plans, policies, and programs regarding traffic circulation and congestion would be less than significant and no mitigation is necessary.

**c. Change in Air Traffic Patterns — *No Impact***

The Proposed Project does not include any features or actions that are related to airports or air traffic. There would be no impact on air traffic or airport service, and no mitigation is required.

**d. Increased Hazards Due to Design Features — *Less than Significant***

The Proposed Project does not propose any changes that would permanently reconfigure or alter roadways in the project area. Please see Items a and b, above, for a discussion of temporary lane closures and delays. The Proposed Project would not result in a permanent adverse impact on roadway safety conditions. The Project's temporary effect on traffic safety hazards would be less than significant and no mitigation is required. Also,

the Proposed Project would likely reduce road hazards by reducing flooding across Green Valley Creek.

**e. Inadequate Emergency Access — *Less than Significant***

The Proposed Project does not include any structures that would permanently block or constrain roadways and would therefore not result in a permanent impact on emergency access. The Project's impact on emergency access would be less than significant. No mitigation is required. Please see Items a and b, above, for a discussion of road access during construction. Also, the Proposed Project would likely improve emergency access by reducing flooding across Green Valley Creek.

**f. Conflict with Alternative Transportation Policies — *Less than Significant***

The Proposed Project would not result in permanent effects on bicycle or pedestrian traffic. As previously described, the majority of project activities would occur on private land where public access is not permitted. Public transit routes do not exist within the project area and therefore are not anticipated to be impacted by the project. However, maintenance activities requiring temporary lane or road closure on Green Valley Road could disrupt eastbound pedestrian and bicycle access to existing transit stops in Graton (SCT 2018), general access along a public road, and sidewalk-based pedestrian access.

If road or lane closure is required within the project area, Sonoma County Transportation and Public Works will be notified and consulted and closures will be scheduled outside of peak traffic hours to minimize conflicts (Table 2, GN-3). Consultation with transit providers will ensure that effects on alternative transit systems would be accounted for and that service would not be significantly disrupted. Therefore, the project's temporary impacts on alternative transportation would be less than significant. No mitigation is required.



## 4.17 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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion of Potential Impacts

Tribal cultural resources are defined in §21074 of the Public Resources Code as either:

- “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” that are included in the state register of historical resources or a local register of historical resources, or that are determined to be eligible for inclusion in the register; or
- Resources determined by the CEQA lead agency to be significant based on the criteria for listing in the state register. In applying these criteria the lead agency must consider the value of the resource to the tribe.

The legislation requires that lead agencies provide notice to tribes in the geographic area of a proposed project if they have requested to be notified. The tribe may request consultation within 30 days of receipt of the notice. This consultation may include the type of environmental review appropriate for the project, the significance of tribal cultural resources and associated impacts, alternatives and mitigation (State of California, 2014).

Formal AB52 tribal consultation letters were sent by certified mail to the Federated Indians of Graton Rancheria (Graton Rancheria), Lytton Rancheria of California, and Middletown Rancheria of Pomo Indians of California on February 26, 2018. The Water Agency received a formal request from Graton Rancheria on March 15, 2018 for tribal consultation on the type of environmental review appropriate for the Project, the significance of tribal cultural resources and associated impacts, alternatives and mitigation. Consultation with Graton Rancheria included the Water Agency's sharing of the historical resources study and geomorphic assessment prepared for the Proposed Project, BMPs proposed for the project, and initial evaluation of potential for cultural and tribal resources impacts. The Water Agency is unaware of tribal cultural resources within the Proposed Project area.

As described in the Project Background, the project site includes areas within the Green Valley Creek corridor that have been previously disturbed by sediment removal activities. The Proposed Project would include excavation of aggraded creek sediments, some of which will have been deposited as recently as March 2017.

Tom Origer and Associates conducted an onsite assessment and archival records search for the Proposed Project location and submitted a summary of the results and recommendations on February 23, 2018 (HRS 2018). The site assessment and record search did not identify any historical resources, archeological resources, unique paleontological resources or geological features, or human remains within the Project area.

**a. Adverse Change in Significance of a Tribal Cultural Resource Listed or Eligible for Listing in the California Register of Historical Resources — *Less than Significant***

The Proposed Project would not 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 listed as eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resource Code section 5010.1(k).

However, excavation during project construction has the potential to expose and affect subsurface cultural resources that were not visible or identified during the archival records search for the project. To further minimize and avoid potential impacts to unknown cultural resources, construction activities would incorporate the use of BMPs, as defined in project description and specifications (Table 2). For example, prior to initiation of ground-disturbing activities, BMP CR-1 would require the Water Agency to provide education training for maintenance crews about the kinds of cultural materials that could be present at the project site and the protocols to be followed should any such materials be uncovered during construction. Training shall be conducted by 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) (qualified professional archeologist).

BMP CR-1 would also require that if discovery is made of items of historical, archaeological or paleontological interest, all work activities would immediately cease in the area of discovery. Work would not resume until a qualified professional archaeologist meeting the U.S. Secretary of Interior's professional standards has evaluated the significance of the item(s). 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, a research design and excavation plan would be prepared and implemented prior to work resuming. BMP CR-1 also includes compliance with Public Resources Code 5097.98 and Health and Human Safety Code 7050.5, pertaining to the discovery of human remains. These practices and procedures protect cultural resources by avoiding or minimizing potential adverse impacts during construction activities. Therefore, potential effects on cultural resources would be less than significant. No mitigation is necessary.

**b. Adverse Change in Significance of a Significant Resource Pursuant to PRC Section 5024.1 — *Less than Significant***

The Proposed Project would not 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 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. Please refer to Item XVII a). No mitigation is required.

## 4.18 Utilities and Service Systems

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable RWQCB?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Require or result in the construction of new water or wastewater treatment facilities or an expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Require or result in the construction of new stormwater drainage facilities or an expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Have sufficient water supplies available to serve the Project from existing entitlements and resources, or would new or expanded entitlements be needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be served by a landfill with insufficient permitted capacity to accommodate the Project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion of Potential Impacts

**a-c, e. Wastewater and Storm water Generation or Treatment — *No Impact***

The Proposed Project is entirely focused on flood control activities, and does not include any uses, features, or facilities that would generate wastewater. Furthermore, the Proposed Project would not increase or alter the distribution of the population in the project area as to alter the need or demand for wastewater treatment. There would be no impact related to wastewater facilities and no mitigation is required.

Similarly, the Proposed Project would not expand the capacity of any existing storm water drainage facility. The Proposed Project would improve flood conveyance in a section of Green Valley Creek. As such, there would be no impact associated with storm water generation or treatment facilities and no mitigation is required.

**d. Potable Water Supply — *Less than Significant***

Potential activities that may require water include spraying for dust control and irrigation of revegetated sites. As described in Table 2, HAZ-3, on-site vehicle cleaning may occur, but only as needed to prevent the spread of sediment, pathogens, or exotic/invasive species.

Newly planted vegetation may require irrigation until the plants become established. Revegetation would include considerations to ensure that plantings are appropriate to the site conditions to minimize irrigation needs and ensure long-term success. Successful establishment of vegetation would not require long-term water supplements. Thus, this impact would be less than significant, and no mitigation would be required.

**f, g. Solid Waste Disposal — *Less than Significant***

The Proposed Project activities would generate small amounts of debris consisting of trash found in the creek. Sediment excavated during construction would be placed at a designated upland site. If needed, solid waste would be disposed of at the Sonoma County Central Landfill, which has the capacity to accommodate the disposal requirements of the Proposed Project's activities. Disposal at this facility is compliant with federal, state, and local regulations. Thus, this impact is less than significant. No mitigation is required.

#### 4.19 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 degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Does the Project have impacts that are individually limited but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Does the Project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### Discussion of Potential Impacts

##### a. Effects on Environmental Quality, Fish or Wildlife, and Historic Resources — *Less than Significant*

Please refer to the impact discussions presented in Sections 4.1 through 4.18, in particular the impact analysis for Biological Resources and Cultural Resources. The

project would not have potential for significant impacts related to any of the factors described in the checklist question above. Impacts would be less than significant, and no mitigation is required.

**b. Cumulative Impacts — Refer to discussion of specific impacts below for significance conclusions**

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 Water Agency implemented an emergency sediment removal project at the project site in 2017 to alleviate active flooding of Green Valley Road and adjacent property. The emergency project resulted in excavation of an active channel, which is proposed to be maintained under the Proposed Project. The Proposed Project would have less than significant temporary impacts during construction and in the long-term the project would have beneficial effects by reducing fish and wildlife strandings, the risk of flood damage to adjacent properties, and road delays and closures during flood events. When considered together, the less than significant impacts of the Proposed Project and the impacts of the emergency project do not result in significant cumulative effects. The Water Agency and Sonoma County Department of Public Works have submitted a grant application for a design of a future flood management project at Green Valley Creek. The potential impacts of a future flood management project would be anticipated to be similar to the Proposed Project and are not anticipated to result in cumulatively considerable environmental impacts.

**c. Effects on Environmental Quality, Fish or Wildlife, and Historic Resources — *Less than Significant***

Please refer to the impact discussions presented in Sections 4.1 through 4.18, in particular the impact analysis for Biological Resources and Cultural Resources. The project would not have potential for significant impacts related to any of the factors described in the checklist question above. Impacts would be less than significant, and no mitigation is required.

## 5.0 References

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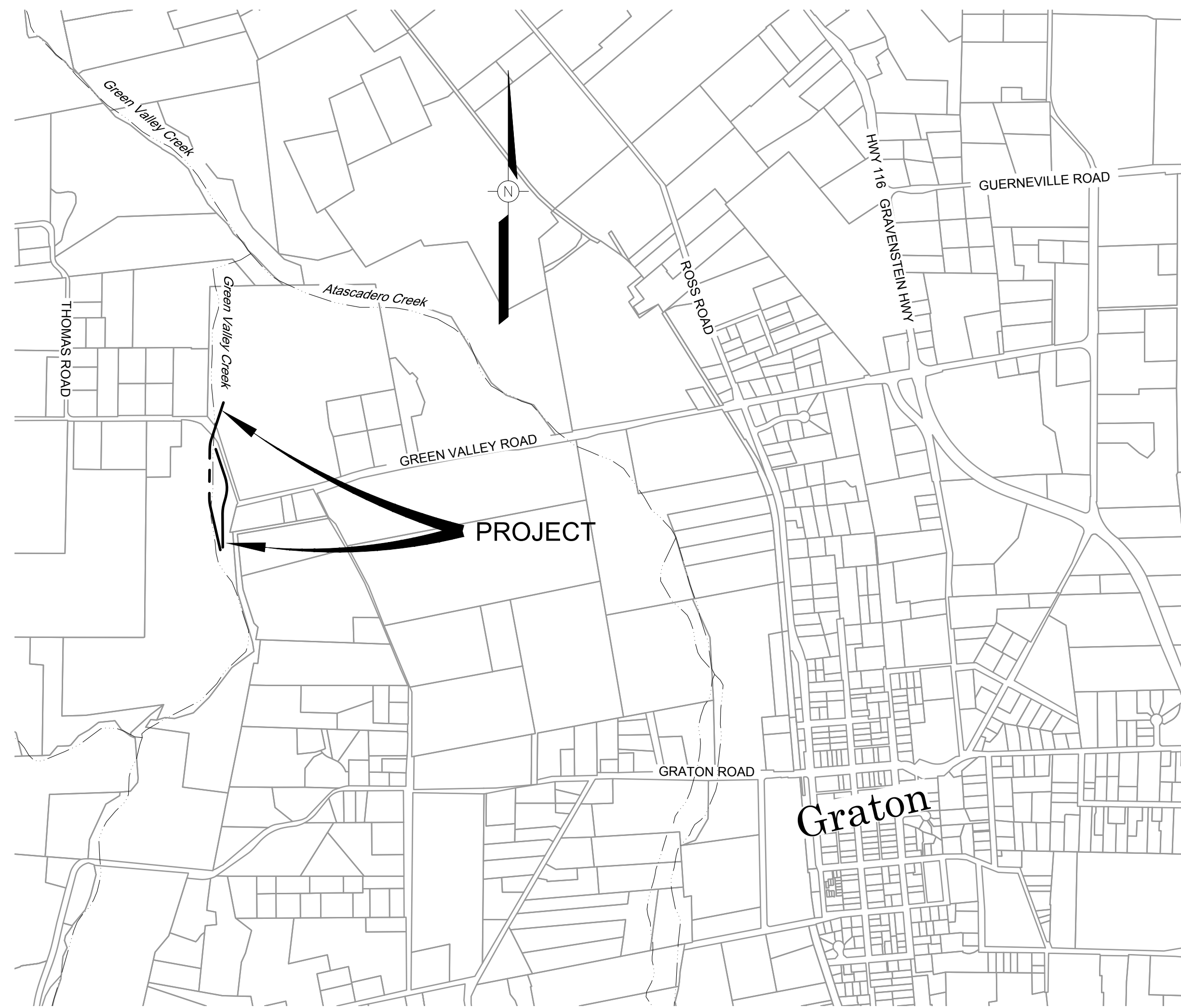
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# Appendix A: Project Design Plans

# SMP - LOWER RUSSIAN RIVER - ZONE 5A GREEN VALLEY - REACH 6 (2018) SEDIMENT REMOVAL



**VICINITY MAP**

NTS



**LOCATION MAP**

NTS

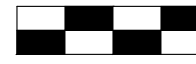
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SHEET NUMBER	SHEET TITLE	SHEET DESCRIPTION
1	G-01	INDEX TO DRAWINGS, VICINITY AND LOCATION MAPS
2	C-01	PLAN AND PROFILE
3	C-02	SECTIONS

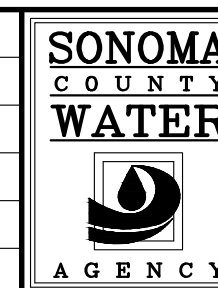
### EXCAVATION

PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT)	AVERAGE WIDTH	DEPTH	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING FROM SERVICE ROAD OR IN THE DEWATERED CHANNEL.	STA 30+22 to STA 31+05	83	26	1.6	138
	STA 31+05 to STA 31+80	75	24	1.5	116
	STA 31+80 to STA 32+60	80	24	1.8	148
	STA 32+60 to STA 33+42	82	28	2.6	218
	STA 33+42 to STA 35+35	108	27	3.2	344
	STA 40+00 to STA 40+61	61	12	2.6	70
	STA 40+61 to STA 41+47	86	25	4	318
	STA 41+47 to STA 42+23	76	26	4	296
	STA 42+23 to STA 43+07	84	26	3.4	273
	STA 43+07 to STA 43+86	79	25	4.6	340
	STA 43+86 to STA 45+50	164	22	3.5	470

## FINAL DESIGN

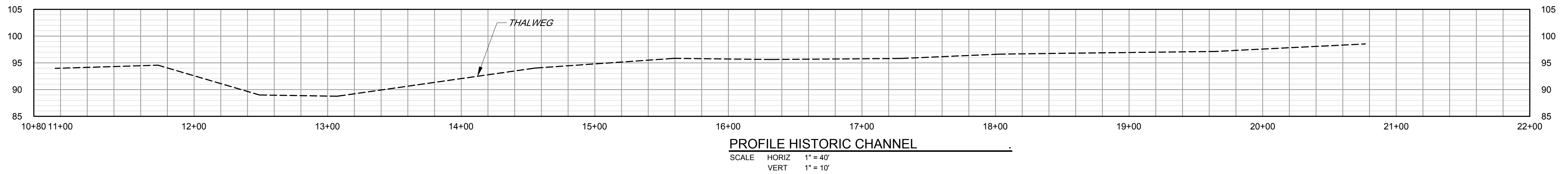
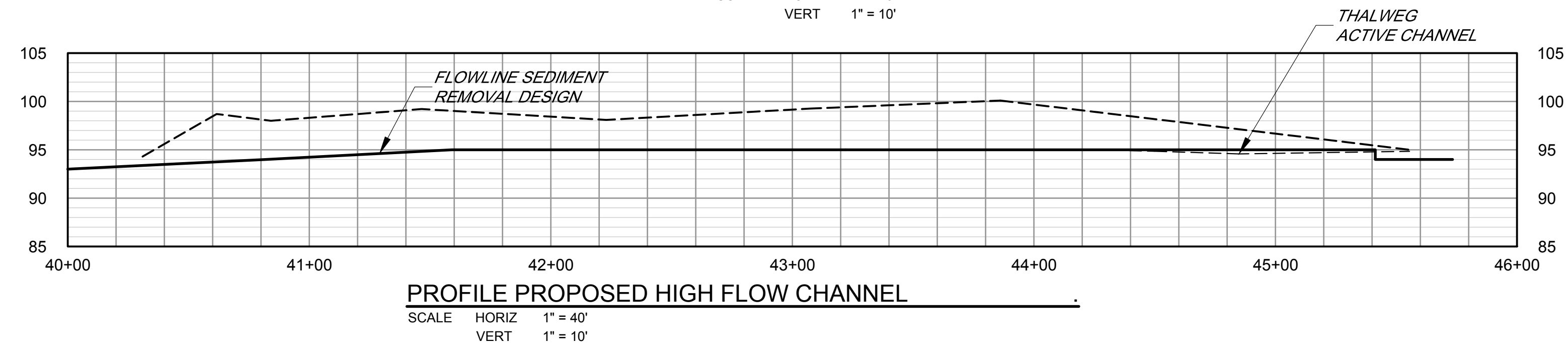
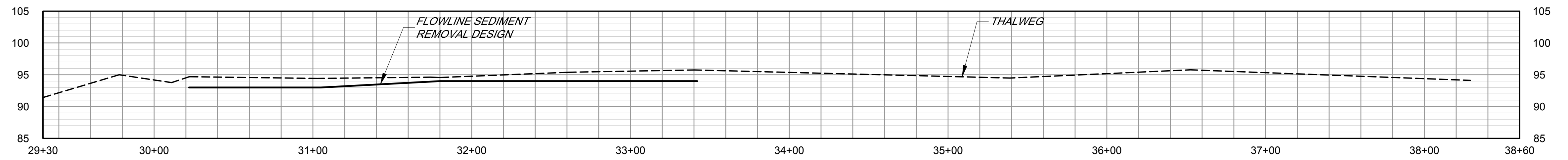
  
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NO.	DATE	REVISION	BY



SCALE: AS SHOWN      DATE: FEB 06, 2018  
 DRAWN: SMP  
 REVIEWED:

SMP - LOWER RUSSIAN RIVER - ZONE 5A GREEN VALLEY - REACH 6 (2018) SEDIMENT REMOVAL INDEX TO DRAWINGS, VICINITY AND LOCATION MAPS		
FILE NAME: 2018_GreenValley-G	DRAWING NUMBER: G-01	SHEET 1 OF 3



**FINAL DESIGN**

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 ADJUST SCALE ACCORDINGLY

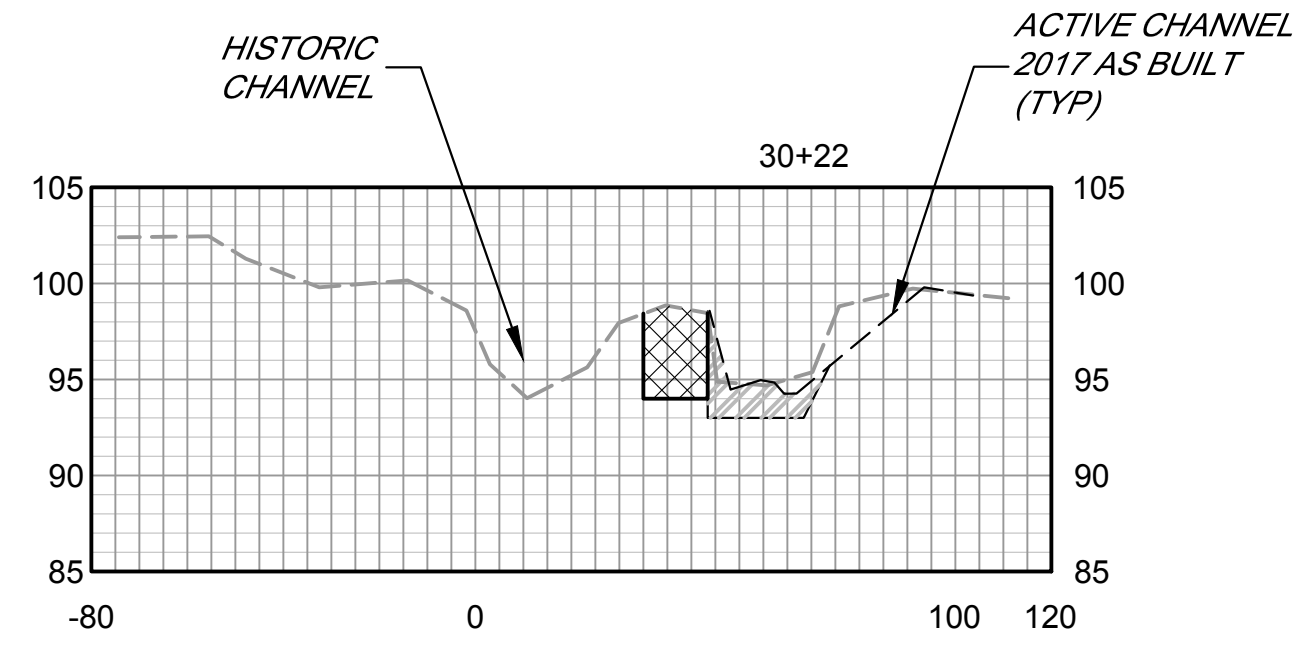
NO.	DATE	REVISION	BY

**SONOMA COUNTY WATER AGENCY**

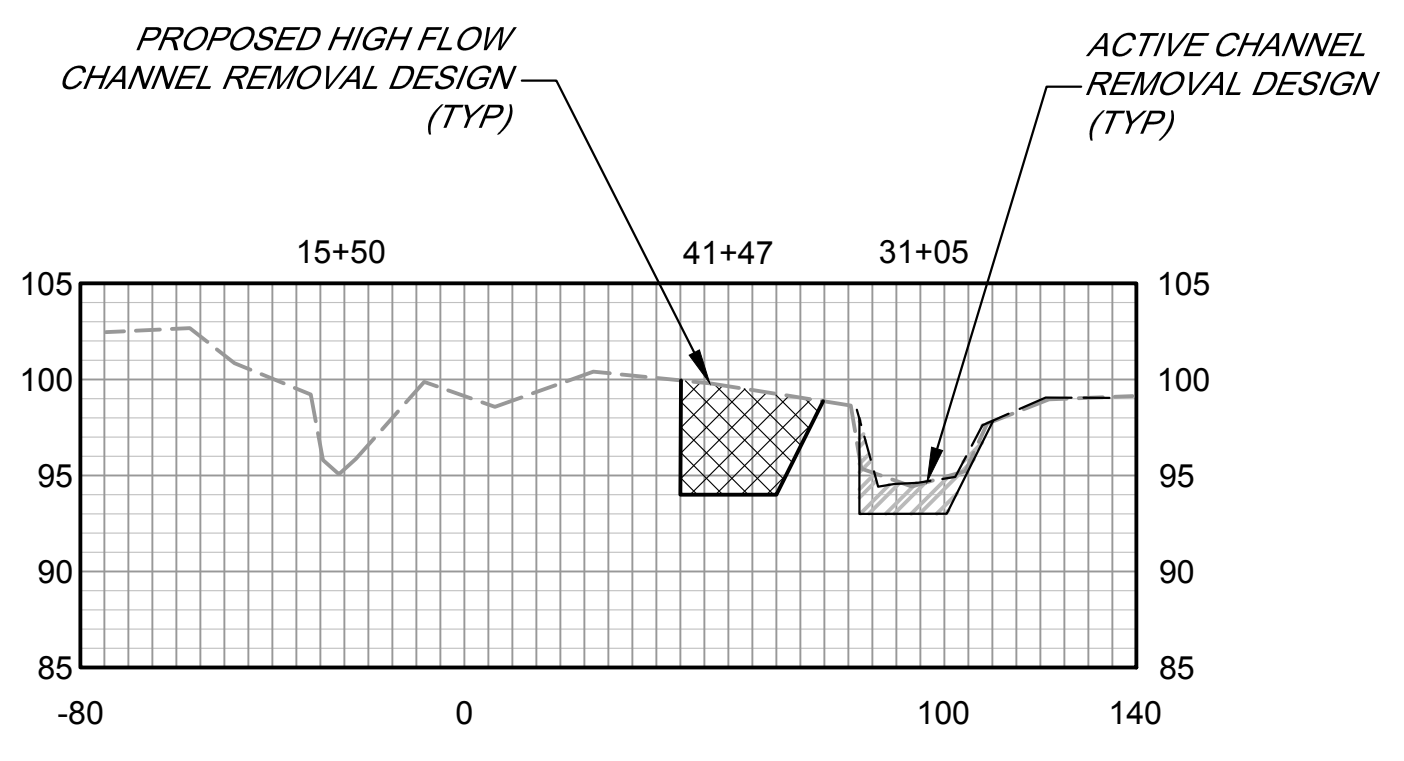
SCALE: AS SHOWN DATE: FEB 06, 2018  
 DRAWN: SMP  
 REVIEWED:

SMP - LOWER RUSSIAN RIVER - ZONE 5A  
**GREEN VALLEY - REACH 6 (2018) SEDIMENT REMOVAL PLAN AND PROFILE**

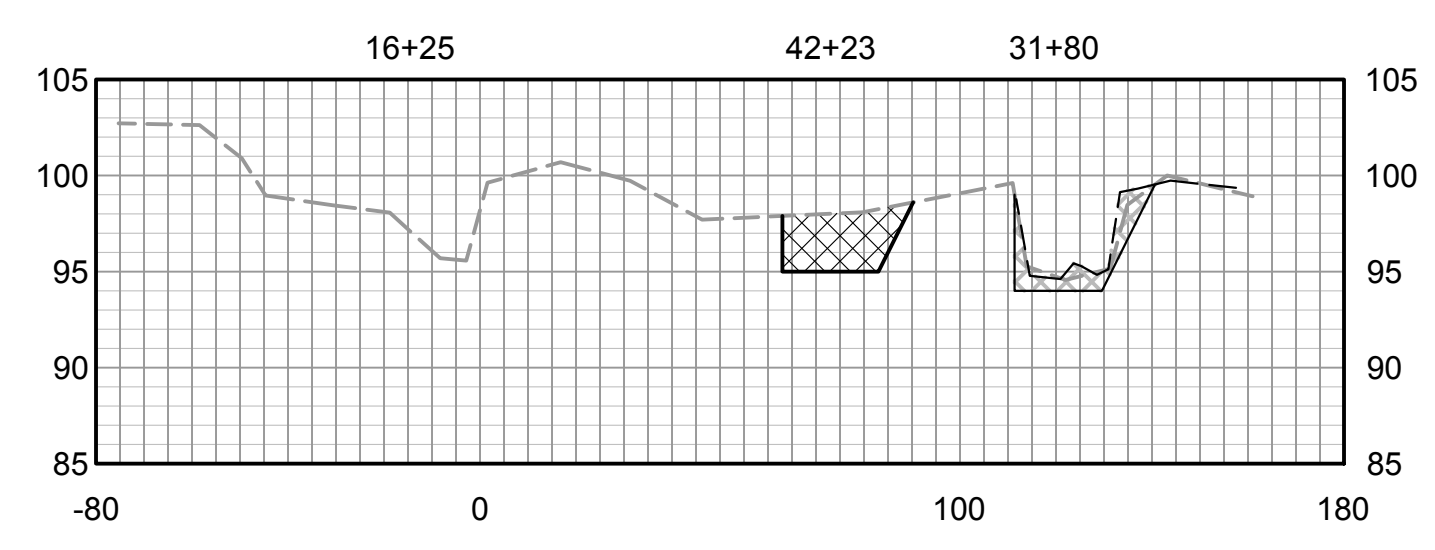
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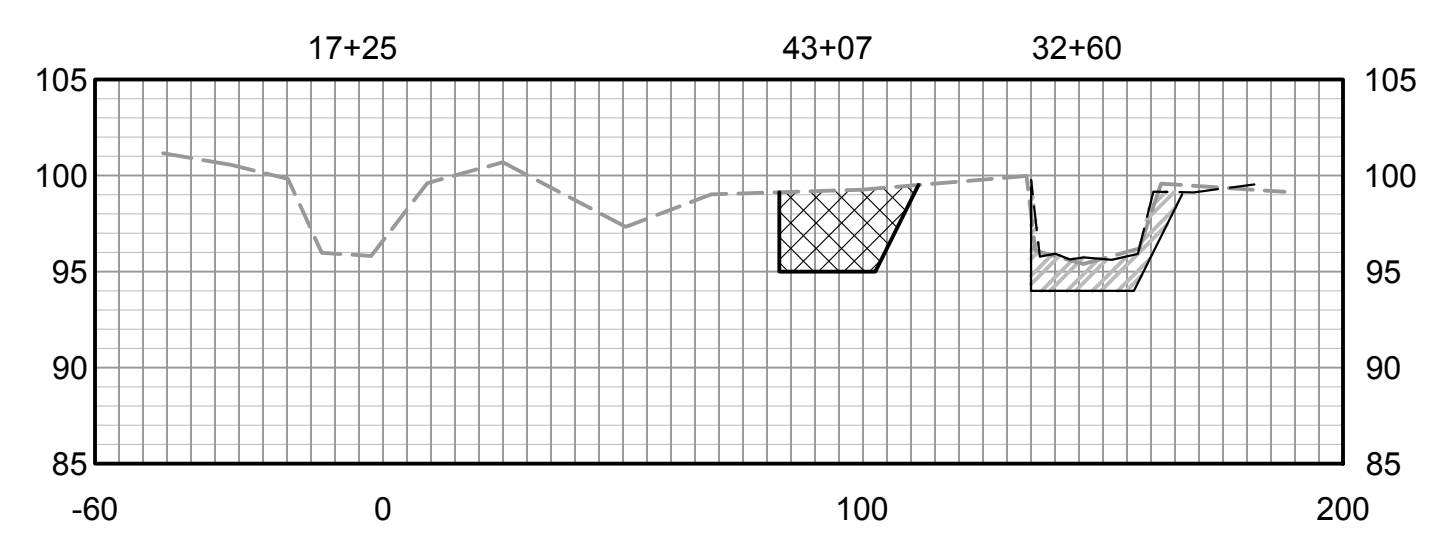
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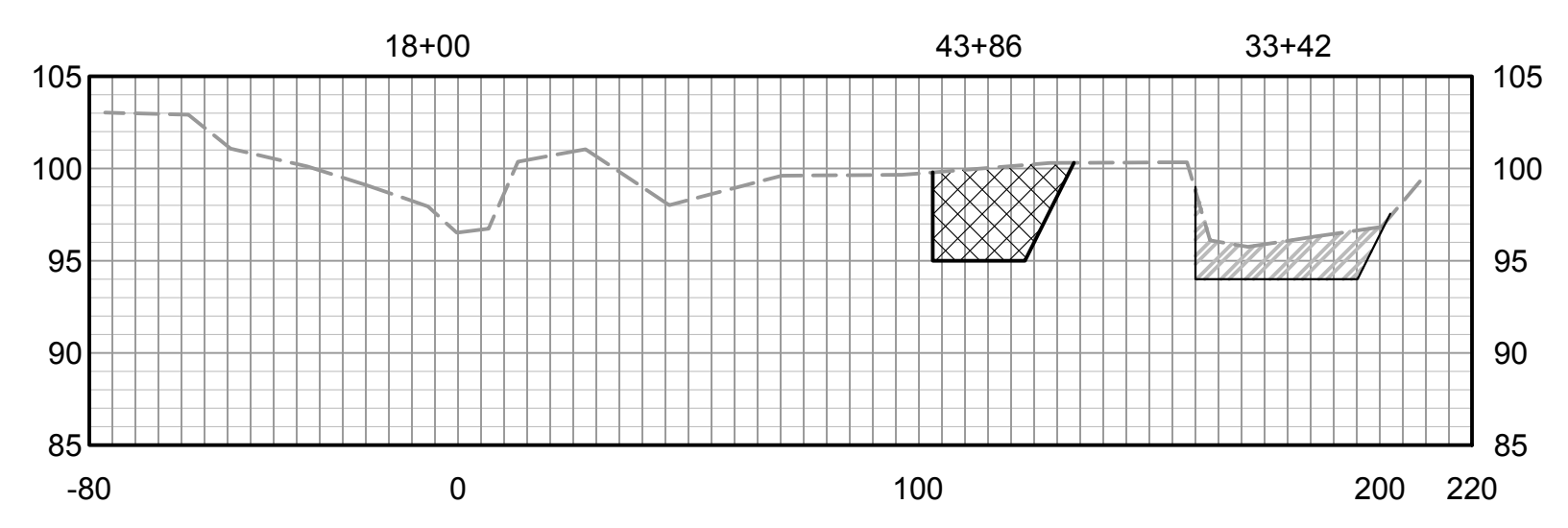
(B)



(C)



(D)



(E)

**SECTIONS**  
 SCALE HORIZ 1" = 40'  
 VERT 1" = 10'

**FINAL DESIGN**

BAR LENGTH ON ORIGINAL  
 DRAWING EQUALS ONE INCH.  
 ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

**SONOMA COUNTY WATER AGENCY**

SCALE: AS SHOWN DATE: FEB 06, 2018  
 DRAWN: SMP  
 REVIEWED:

SMP - LOWER RUSSIAN RIVER - ZONE 5A  
 GREEN VALLEY - REACH 6 (2018) SEDIMENT REMOVAL SECTIONS

FILE NAME: 2018\_GreenValley-C CONTRACT NUMBER:  
 DRAWING NUMBER: C-02 SHEET 3 OF 3

T:\food control\zone 5a\Green\_Valley\GreenValley\_2018

## **Appendix B: Special Status Species**

Note: Plant species listed below in Table B-3 have specialized habitat requirements such as vernal pools or soils derived from serpentine, volcanic material, or shale that do not occur in the Project area. Many plant species have a very restricted range outside of the Project area. Other plants only inhabit uplands in dry mountainous terrain or on exposed rock outcrops, which are not present in the Project area.

**Table B-1: Special status plant species unlikely to occur in the Project area due to habitat restrictions.**

<b>Scientific Name (Common Name)</b>	<b>Status Federal, State, CNPS<sup>1</sup></b>
Vernal Pool Dependent	
<i>Limnanthes vinculans</i> (Sebastopol meadowfoam)	FE, CE, 1B.1
<i>Trifolium amoenum</i> (two-fork clover)	FE, 1B.1
<i>Trifolium [depauperatum] hydrophilum</i> (saline clover)	1B.2
Serpentine/Ultramafic	
<i>Arctostaphylos bakeri</i> ssp. <i>bakeri</i> (Baker's manzanita)	CR, 1B.1
<i>Arctostaphylos hispidula</i> (Howell's Manzanita)	1B.1
<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i> (Raiche's Manzanita)	1B.1
<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i> (serpentine bird's-beak)	4.3
<i>Cordylanthus tenuis</i> ssp. <i>capillaries</i> (Pennell's bird's-beak)	FE, CR, 1B.2
<i>Erigeron greenei</i> (Greene's narrow-leaved daisy)	1B.2
<i>Fritillaria liliacea</i> (Fragrant fritillary)	1B.2
<i>Gilia capitata</i> ssp. <i>tomentosa</i> (Woolly-headed gilia)	1B.1
<i>Lessingia arachnoidea</i> (Crystal Springs lessingia)	1B.2
<i>Lessingia hololeuca</i> (wholly-headed lessingia)	3
Mountainous/Rocky Xeric Uplands	
<i>Amorpha californica</i> var. <i>napensis</i> (Napa false indigo)	1B.2



<b>Scientific Name (Common Name)</b>	<b>Status Federal, State, CNPS<sup>1</sup></b>
<i>Ceanothus confuses</i> (Rincon Ridge ceanothus)	1B.1
<i>Ceanothus foliosus</i> var. <i>vineatus</i> (Vine Hill ceanothus)	1B.1
<i>Ceanothus gloriosus</i> var. <i>exaltatus</i> (glory brush)	4.3
<i>Ceanothus purpureus</i> (Holly-leaved ceanothus)	1B.2
<i>Horkelia tenuiloba</i> (thin-lobed horkelia)	1B.2
<i>Delphinium luteum</i> (yellow larkspur, golden larkspur)	FE, SR, 1B.1
<i>Usnea longissima</i> (Methuselah's beard lichen)	4.2
Unique Habitat	
<i>Delphinium bakeri</i> (Baker's larkspur)	FE, CE, 1B.1

<sup>1</sup>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.**

<b>Scientific Name (Common Name)</b>	<b>Status<sup>1</sup></b>	<b>Habitat Preferences and Distribution</b>	<b>Flowering and Life Form</b>	<b>Habitat Suitability and Local Distribution<sup>2</sup></b>	<b>Potential for Occurrence<sup>3</sup></b>
<i>Alopecurus aequalis</i> var. <i>sonomensis</i> (Sonoma alopecurus)	FE 1B.1	Occurs in freshwater marshes, swamps, and riparian scrub.	May-July perennial herb	Possible habitat along Green Valley Creek but marginal habitat within project area. One CNDDDB record from Freestone Marsh in 1962.	Low
<i>Blennosperma bakeri</i> (Sonoma sunshine)	FE SE 1B.1	Occurs in mesic valley and foothill grassland and vernal pools.	March-May annual herb	Largely vernal pool species. Marginal habitat within Project area. Several CNDDDB occurrences at vernal pools on the Santa Rosa Plain and Sonoma Valley area. No reports near project area.	Low
<i>Calamagrostis bolanderi</i> (Bolander's reed grass)	4.2	Bogs, upland forests, coastal scrub, and marshes.	May-Aug Perennial herb (rhizomatous)	Possible habitat along Green Valley Creek but marginal habitat within project area. CNPS report from Camp Meeker area, but not known from the project area.	Low

<b>Scientific Name (Common Name)</b>	<b>Status<sup>1</sup></b>	<b>Habitat Preferences and Distribution</b>	<b>Flowering and Life Form</b>	<b>Habitat Suitability and Local Distribution<sup>2</sup></b>	<b>Potential for Occurrence<sup>3</sup></b>
<i>Castilleja ambigua</i> var. <i>ambigua</i> (Johnny-nip)	4.2	Coastal prairie, coastal scrub, marshes and seeps, and vernal pool margins.	Mar – Aug Annual herb	Marginal habitat within project area. CNPS report from Camp Meeker and Sebastopol areas, but not known from the project area.	Low
<i>Iris longipetala</i> (coast iris)	4.2	Coastal prairie, lower montane coniferous forest, meadows, and seeps	Mar – May Perennial herb (rhizomatous)	Marginal habitat within project area. CNPS report from Camp Meeker area.	Low
<i>Carex comosa</i> (bristly sedge)	2B.1	Margins of marshes, swamps, and wetland places. Elevation 0 to 2,050 feet.	May – Sep Perennial herb (rhizomatous)	Possible habitat along Green Valley Creek but marginal habitat within project area. CNDDDB report from Guerneville area in 1896. Marginal habitat in project area.	Low
<i>Pleuropogon hooverianus</i> (North Coast semaphore grass)	ST 1B.1	Open and mesic areas in broad-leaved and coniferous forest, meadows, and seeps. Prefers wet, grassy, shady areas, sometimes freshwater marshes.	April-June perennial rhizomatous herb	Possible habitat along Green Valley Creek but marginal habitat within project area. CNPS report from Camp Meeker area. CNDDDB report from Freestone area in 1981.	Low

<b>Scientific Name (Common Name)</b>	<b>Status<sup>1</sup></b>	<b>Habitat Preferences and Distribution</b>	<b>Flowering and Life Form</b>	<b>Habitat Suitability and Local Distribution<sup>2</sup></b>	<b>Potential for Occurrence<sup>3</sup></b>
<i>Erigeron biolettii</i> (streamside daisy)	3	Occurs in broadleaf upland forest, cismontane woodland and rocky mesic areas of North Coast coniferous forests. Found on dry slopes, rocks, ledges along rivers.	June-October perennial herb	Marginal habitat within project area. CNPS report from Camp Meeker area.	Low

<sup>1</sup> 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

<sup>2</sup> Local distribution determined by a search of the California Natural Diversity Database (CNDDDB) and California Native Plant Society (CNPS).

<sup>3</sup> 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 occurrence 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.**

<b>COMMON &amp; SCIENTIFIC NAME</b>	<b>FEDERAL &amp; STATE LISTING<sup>1</sup></b>	<b>HABITAT REQUIREMENTS</b>	<b>HABITAT SUITABILITY AND LOCAL DISTRIBUTION<sup>2</sup></b>	<b>POTENTIAL FOR OCCURRENCE<sup>3</sup></b>
<b>INVERTEBRATES</b>				
Obscure bumble bee <i>Bombus caliginosus</i>	SA	Food plant species include several upland shrubs and forbs.	CNDDDB report from Occidental in 1969. No suitable habitat within the project area.	Low
Western bumble bee <i>Bombus occidentalis</i>	SA	Nests in colonial hives. Forages on a variety of flower types for pollen.	CNDDDB reports from Goat Rock State Beach in 1963, Freestone area in 1950. May infrequently forage or nest in the project area, but not dependent on aquatic or wetland habitats.	Low
California freshwater shrimp <i>Syncaris pacifica</i>	FE SE	Low elevation, low gradient streams where riparian cover is moderate to heavy in Marin, Sonoma and Napa Counties. Utilizes pools and undercut banks with exposed roots out of direct streamflow.	Freshwater shrimp are known from the project area. Shrimp were found during emergency flood control work in March 2017.	High
Myrtle's silverspot butterfly <i>Speyeria</i>	FE	Larval food plant <i>Viola adunca</i> . Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula; and possibly to the Russian River mouth.	No reports in project vicinity. No suitable habitat in project area.	No Potential

<i>zerene myrtleae</i>				
San Bruno elfin butterfly <i>Callophrys (=Incisalia) mossii bayensis (=Incisalia)</i>	FE	Coastal, mountainous areas with grassy ground cover, near San Bruno mountain. Steep, north facing slopes within fog belt.	No reports in project vicinity. No suitable habitat in project area.	No Potential
<b>FISH</b>				
California Coastal Chinook Salmon <i>Oncorhynchus tshawytscha</i>	FT	Adults migrate upstream in fall. This species requires cold, clear, freshwater rivers and large creeks with gravel substrate for spawning. Juveniles (smolts) migrate downstream in spring/summer to the ocean.	Chinook salmon are reported regularly from Green Valley Creek during fisheries monitoring studies conducted for the Russian River Coho Salmon Captive Broodstock Program. The Russian River mainstem is designated Critical Habitat, but not Green Valley Creek.	High
Central California Coast Coho Salmon <i>Oncorhynchus kisutch</i>	FE SE	Spawning occurs in well oxygenated streams with riffles, loose, silt-free gravel substrate. Preferred rearing habitat consists of slow water pools or cool back water areas where fish are hidden from predators and waters are cool and productive.	Green Valley Creek has a known spawning run of coho salmon. Suitable rearing habitat occurs in the project area. Green Valley Creek is designated Critical Habitat. Coho fry were found during emergency flood control work in March 2017.	High

Central California Coast steelhead <i>Oncorhynchus mykiss irideus</i>	FT --	This species requires cool water, adequate pool and riffle depths, and moderate stream velocities. Adults spawn in clean gravel along moderate gradient creeks. Juveniles may rear one or more years in creeks and estuaries before migrating to the ocean.	Steelhead are regularly reported from Green Valley Creek during fisheries monitoring studies conducted for the Russian River Coho Salmon Captive Broodstock Program. Green Valley Creek is designated Critical Habitat.	High
<b>AMPHIBIANS</b>				
California giant salamander <i>Dicamptodon ensatus</i>	SSC	Perennial streams with cool, clear water. Prefers moderate and high gradient creeks with pools and riffles. Adults inhabit forests. Larvae are aquatic.	Several CNDDDB reports in project vicinity. Suitable habitat in project area.	High
California red-legged frog <i>Rana draytonii</i>	FT SSC	A medium-sized frog that 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. Range extends from Redding to Baja California, Mexico. Local breeding occurs in winter.	CNDDDB report along Thurston Creek near Bodega. Green Valley Creek provides potential breeding and foraging habitat. Project area outside of federal Critical Habitat designation.	High
Foothill yellow-legged frog <i>Rana boylei</i>	SSC, SC	A medium-sized frog that inhabits moderate-gradient streams with cool clear water in woodland and coniferous forest.	Several CNDDDB reports in project vicinity. One CNDDDB report located along Green Valley Creek upstream of project area. Suitable habitat in project area.	High

REPTILES				
Green turtle <i>Chelonia mydas</i>	FT	Globally distributed, occurring generally in the tropical and subtropical waters. In the eastern North Pacific, occurs from Baja California to southern Alaska. Occupies the terrestrial, oceanic, and neritic zones during their lives.	Marine species. No suitable habitat in project area.	No Potential
Western pond turtle <i>Emys (=Actinemys) marmorata</i>	SSC	Freshwater turtle that inhabits permanent or nearly permanent bodies of water with low velocities. Habitats include creeks, rivers, ponds, lakes, ditches.	Serval CNDDDB reports from the Russian River and nearby creeks. Reported in lower Green Valley Creek. Suitable habitat in the project area.	High
BIRDS				
Marbled Murrelet <i>Brachyramphus marmoratus</i>	FT	Feeds along coastal waters. Nests in old-growth forests, characterized by large trees, multiple canopy layers, and moderate to high canopy closure. Forests are located close enough to the marine environment for the birds to fly to and from nest sites.	CNDDDB reports along coast at Arched Rock, Jenner. No reports of nesting in the project vicinity.	Low
Northern spotted owl <i>Strix occidentalis caurina</i>	FT SSC	Moist, dense coniferous old-growth forests of redwood, Douglas fir, western red cedar and other conifers. Nest in old	No CNDDDB occurrences in project vicinity. No suitable nesting habitat in the project area, but potential foraging habitat is present.	Low



		raptor nest cavities or natural cavities in trees.		
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FT SE	Inhabits open woodland and deciduous riparian woodland. Nests in deciduous woodlands, moist thickets, orchards, overgrown pastures. Requires patches of at least 25 acres of dense riparian forest.	There are no CNDDDB occurrences in the project vicinity. Marginal habitat occurs in the Project area.	Low
<b>MAMMALS</b>				
American badger <i>Taxidea taxus</i>	SSC	This carnivore inhabits open areas with friable soils in woodland, grassland, savannah and desert habitats. A fossorial mammal that preys predominately on ground squirrels and pocket gophers.	CNDDDB occurrence from Freestone. Marginal habitat present in the project area. May be an infrequent visitor.	Low
Sonoma tree vole <i>Arborimus pomo</i>	SSC	Old growth and other forests, mainly Douglas-fir, redwood, and montane hardwood-conifer habitats along the coast from Sonoma County north to the Oregon border. Restricted to the fog belt. Eats almost exclusively Douglas fir needles.	Two CNDDDB reports from Freestone and Occidental area. Marginal habitat in the project area.	Low
Western red bat	SSC	Occurs throughout most of central and southern California, except alpine and desert	CNDDDB report from Guerneville area at a rock quarry in 2003. Riparian trees in project area may	Moderate

<i>Lasiurus blossevillii</i>		regions. Roosts in trees and forages in a variety of open habitats.	provide roosting habitat. May forage over the project area.	
Hoary bat <i>Lasiurus cinereus</i>	SSC	Occurs throughout most of California, except desert regions. Prefers open habitat or habitat edges for foraging. Roosts in dense foliage in medium to large trees.	CNDDDB reports from Guerneville area in 1913 and Forestville in 1948. No recent reports. Riparian trees in project area may provide roosting habitat. May forage over the project area.	Moderate
Pallid bat <i>Antrozous pallidus</i>	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.	Several CNDDDB reports from the Russian River vicinity. All records are from buildings. Riparian areas and bridges in the project area provide potential foraging and roosting habitat.	Moderate

<sup>1</sup>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

<sup>2</sup>Local distribution determined by a search of the CDFW California Natural Diversity Database (CNDDDB) and other resources.

<sup>3</sup>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 occurrence 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 project area.

## **Appendix C: Air Quality and Green House Gas Emission Calculations**

**Table C-1: Project emission calculation details: vehicle and equipment assumptions.**

Vegetation Management													Ref #
Type	Number of Vehicles	Days	Hours per Day	Years	Hours per year	On-road	Off-road	Diesel	Gas	Horse-power	Gross Vehicle Weight Rating (lbs)	Combined or City Fuel Economy (mpg)	
2007 FORD F350 XL SUPER DUTY 4X4 W/MANLIFT	1	4	8	5	32	x		x		362	10,000 - 14,000	15	10
2014 FORD F150 XL 4X4 SUPER CAB	2	4	8	5	64	x		x		411	6,100 - 7,050	22	
2012 FORD F550 NURSERY DUMP TRUCK	1	4	8	5	32	x		x		440	17,950 - 19,500	8.7	3
Stihl MS261 chainsaw	2	4	4	5	32		x		x	3.0kW (4.0 bhp)			12
Stihl HT101 Pole saw	1	4	4	5	16		x		x	1.05kW (1.4 bhp)			14
Stihl HS82R hedger	2	4	4	5	32		x		x	0.7 kW (0.94 bhp)			13
Stihl BG86 blower	1	4	4	5	16		x		x	0.8 kW (1.07 bhp)			11
13 VERMEER TOWABLE CHIPPER BC1500	1	4	8	5	32		x	x		125 hp (93.21 kW)			15
2017 F550 4x4 CHIP TRUCK	1	4	8	5	32	x			x			6.5	
Channel Excavation (Construction)													
2015 FORD UTILITY TRUCK F350 2WD	1	12	8	5	96	x		x			10,000 - 14,000	13	2
2012 GMC 1/2 TON 4X4 SIERRA QUAD-CAB	1	12	8	5	96	x		x			6,500 - 7,200	14.1	5
2007 FORD RANGER 4X4 EXTRA CAB	1	12	8	5	96	x		x			4,300 - 5,150	18.8	4
2013 FORD F350 4X4 UTILITY W/CRANE	1	12	8	5	96	x		x				13.3	10
97 GODWIN 6" PUMP	2	12	8	5	192		x		x	75			16
2016 FORD SUV ESCAPE	1	12	4	5	48	x			x	240		22.9	1
2009 PETERBILT DUMP TRUCK CONVENTIONAL 367	3	12	8	5	288	x		x		320		3.2	6
950 CAT LOADER	1	12	8	5	96		x	x		130			8
328 CAT EXCAVATOR	1	12	8	5	96		x	x		204			9
09 CAT SKID STEER 289C	1	12	8	5	96		x	x		84			7

**Table C-2: Project on-road emission calculations details.**

**ON-ROAD VEHICLES AND EQUIPMENT**

Source of Emission Factors: EMFAC2014 web database

Emissions, Running = EMFAC (grams/mile) \* total miles \* (0.00220462 lbs/grams)

Emissions, Idle = daily log days \* EMFAC (grams/vehicle/day) \* (0.00220462 lbs/grams)

ANNUAL TRAVEL EMISSIONS (VEG WORK)																										
	Category	Work Days	Miles per trip	Number of trips	Total miles	ROG Running (lbs)	ROG Idle (lbs)	CO Running (lbs)	CO Idle (lbs)	NOx Running (lbs)	NOx Idle (lbs)	PM10 Running (lbs)	PM10 Idle (lbs)	PM2.5 Running (lbs)	PM2.5 Idle (lbs)	SOx Running (lbs)	SOx Idle (lbs)	Fuel Type	Fuel Economy (mpg)	Gallons	Emission Factor CO2 (kg/gal)**	Emission Factor CH4 (g/mi)***	Emission Factor N20 (g/mi)***	Emissions CO2 (kg)	Emissions CH4 (g)	
SCWA environmental staff (daily) 2016 Ford Escape SUV	LDA - GAS	4	13	8	104	0.00827	0.00000	0.28817	0.00000	0.02709	0.00000	0.00054	0.00002	0.00050	0.00000	0.00082	0.00000	gas	22.90000	4.54148	8.78000	0.01630	0.00660	39.87424	1.69520	
2007 FORD F350 XL SUPER DUTY 4X4 W/MANLIFT	LHD2 - DSL	4	13	2	26	0.01201	0.00097	0.05757	0.00802	0.21737	0.02260	0.00235	0.00036	0.00225	0.00023	0.00036	0.00002	diesel	15.00000	1.73333	10.21000	0.00100	0.00150	17.69733	0.02600	
2014 FORD F150 XL 4X4 SUPER CAB	LHD1 - DSL	4	13	2	26	0.01437	0.00097	0.06821	0.00802	0.29379	0.02278	0.00297	0.00046	0.00284	0.00025	0.00032	0.00001	diesel	22.00000	1.18182	10.21000	0.00100	0.00150	12.06636	0.02600	
2012 FORD F550 NURSERY DUMP TRUCK	MDV - DSL	4	13	2	26	0.00175	0.00000	0.02102	0.00000	0.00742	0.00000	0.00099	0.00015	0.00095	0.00000	0.00031	0.00000	diesel	8.70000	2.98851	10.21000	0.00100	0.00150	30.51264	0.02600	
2017 F550 4x4 CHIP TRUCK	MDV - GAS	4	13	2	26	0.00718	0.00000	0.19846	0.00000	0.02899	0.00000	0.00017	0.00003	0.00015	0.00000	0.00037	0.00000	gas	6.50000	4.00000	8.78000	0.01630	0.00660	35.12000	0.42380	
<b>Total Emissions from Vehicle Trips Related to Veg Work (lbs per year)</b>						<b>0.04358</b>	<b>0.00194</b>	<b>0.63341</b>	<b>0.01605</b>	<b>0.57466</b>	<b>0.04539</b>	<b>0.00701</b>	<b>0.00102</b>	<b>0.00668</b>	<b>0.00049</b>	<b>0.00218</b>	<b>0.00003</b>							<b>135.27058</b>	<b>2.19700</b>	
ANNUAL TRAVEL EMISSIONS (SEDIMENT WORK)																										
	Category	Work Days	Miles per trip	Number of trips	total miles	ROG Running (lbs)	ROG Idle (lbs)	CO Running (lbs)	CO Idle (lbs)	NOx Running (lbs)	NOx Idle (lbs)	PM10 Running (lbs)	PM10 Idle (lbs)	PM2.5 Running (lbs)	PM2.5 Idle (lbs)	SOx Running (lbs)	SOx Idle (lbs)	Fuel Type	Fuel Economy (mpg)	Gallons	Emission Factor CO2 (kg/gal)**	Emission Factor CH4 (g/mi)***	Emission Factor N20 (g/mi)***	Emissions CO2 (kg)	Emissions CH4 (g)	
SCWA environmental staff (daily) 2016 Ford Escape SUV	LDA - GAS	12	13	24	312	0.02481	0.00000	0.86450	0.00000	0.08127	0.00000	0.00163	0.00006	0.00150	0.00000	0.00246	0.00000	gas	22.90000	13.62445	8.78000	0.01630	0.00660	119.62271	5.08560	
2015 FORD UTILITY TRUCK F350 2WD	LHD2 - DSL	12	13	24	312	0.14414	0.00290	0.69079	0.02407	2.60850	0.06781	0.02816	0.00108	0.02694	0.00070	0.00433	0.00006	diesel	13.00000	24.00000	10.21000	0.00100	0.00150	245.04000	0.31200	
2012 GMC 1/2 TON 4X4 SIERRA QUAD-CAB	LHD1 - DSL	12	13	24	312	0.17244	0.00290	0.81848	0.02407	3.52548	0.06835	0.03563	0.00137	0.03409	0.00076	0.00388	0.00004	diesel	14.10000	22.12766	10.21000	0.00100	0.00150	225.92340	0.31200	
2007 FORD RANGER 4X4 EXTRA CAB	LDT1 - DSL	12	13	24	312	0.21511	0.00000	1.16586	0.00000	1.03227	0.00000	0.17372	0.00668	0.16621	0.00000	0.00302	0.00000	diesel	18.80000	16.59574	10.21000	0.00100	0.00150	169.44255	0.31200	
2013 FORD F350 4X4 UTILITY W/CRANE	LHD2 - DSL	12	13	24	312	0.14414	0.00290	0.69079	0.02407	2.60850	0.06781	0.02816	0.00108	0.02694	0.00070	0.00433	0.00006	diesel	13.30000	23.45865	10.21000	0.00100	0.00150	239.51278	0.31200	
2009 PETERBILT DUMP TRUCK CONVENTIONAL 367 (3)*	T7 single - DSL	36	9	341	3069	0.96629	0.09623	3.68553	0.29478	36.07126	2.48413	0.25226	0.00296	0.24135	0.00751	0.10740	0.00324	diesel	3.20000	959.06250	10.21000	0.00510	0.00480	9792.02813	15.65190	
SEMI AND LOWBOY (Equipment delivery)	T7 single - DSL	2	13	4	52	0.01637	0.00535	0.06245	0.01638	0.61118	0.13801	0.00427	0.00016	0.00409	0.00042	0.00182	0.00018	diesel	6.00000	8.66667	10.21000	0.00510	0.00480	88.48667	0.26520	
<b>Total Emissions from Vehicle Trips Related to Sediment Work (lbs per year)</b>						<b>1.68331</b>	<b>0.11029</b>	<b>7.97840</b>	<b>0.38335</b>	<b>46.53846</b>	<b>2.82611</b>	<b>0.52384</b>	<b>0.01340</b>	<b>0.50112</b>	<b>0.01010</b>	<b>0.12724</b>	<b>0.00357</b>								<b>10880.05624</b>	<b>22.25070</b>
<b>TOTALS (VEG WORK + SEDIMENT WORK)</b>						<b>ROG (lbs): 1.83911</b>	<b>CO (lbs): 9.01122</b>	<b>NOx (lbs): 49.98462</b>	<b>PM10 (lbs): 0.54527</b>	<b>PM2.5 (lbs): 0.51839</b>	<b>SOx (lbs): 0.13302</b>														<b>Totals: 11015.32681</b>	<b>24.44770</b>
						<b>ROG (tpy): 0.00092</b>	<b>CO (tpy): 0.00451</b>	<b>NOx (tpy): 0.02499</b>	<b>PM10 (tpy): 0.00027</b>	<b>PM2.5 (tpy): 0.00026</b>	<b>SOx (tpy): 0.00007</b>													<b>Totals (lbs): 24233.71899</b>	<b>0.05378</b>	

\* 3 dump trucks working simultaneously; material will be deposited within 9 miles of project location

\*\*Source: 2017 Climate Registry Default Emission Factors, Table 13.1 US Default CO2 Emission Factors for Transport Fuels (page 29)

\*\*\*Source: 2017 Climate Registry Default Emission Factors, Table 13.5 CH4 and N20 Emission Factors for Highway Vehicles by Model Year

**Table C-3: Project off-road emission calculations details.**

OFF-ROAD EQUIPMENT

Criteria Pollutant Emission Factors from OffRoad2007

Emissions (lbs) = Emission Factor (grams/hp-hour) \* hp \* total hours \* 0.00220462 lb/gram

Horsepower was taken from equipment specifications if available, an approximation for that type of equipment

Vehicles were assumed to be approximately 10 years old from start of construction (2017)

GHG Emission Factors from The Climate Registry: <https://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/>

**Off-Road Diesel Emissions (per year)**

Type	Number of Vehicles/ Equipment	Number of Days	Hours per Day	Years	Hours per year	Diesel	max hp	ROG (lbs)	CO (lbs)	NOx (lbs)	PM Total (lbs)	PM10 (lbs)	PM2.5 (lbs)	Estimated gal/hr	Total Gallons	CO2 (kg)	CH4 (g)	N20 (g)
2007 FORD F350 XL SUPER DUTY 4X4 W/MANLIFT	1	4	8	5	32	x	362	2.553832	23.49525	102.1533	2.809215	2.387833	0.421382	2	64	653.44	37.12	16.64
13 VERMEER TOWABLE CHIPPER BC1500	1	4	8	5	32	x	125	1.058218	8.113002	38.62494	0.970033	0.824528	0.145505	0.37	11.84	120.8864	6.8672	3.0784
2013 FORD F350 4X4 UTILITY W/CRANE	1	12	8	5	96	x	362	7.661495	70.48576	306.4598	8.427645	7.163498	1.264147	2	192	1960.32	111.36	49.92
950 CAT LOADER	1	12	8	5	96	x	130	4.402185	74.28688	122.1606	4.402185	3.741857	0.660328	3	288	2940.48	167.04	74.88
328 CAT EXCAVATOR	1	12	8	5	96	x	204	4.317528	39.72126	172.7011	4.749281	4.036889	0.712392	5.7	547.2	5586.912	317.376	142.272
09 CAT SKID STEER 289C	1	12	8	5	96	x	84	3.377831	54.93419	89.06806	4.266733	3.626723	0.64001	3	288	2940.48	167.04	74.88
<b>Annual Emissions for Off-Road Diesel (lbs):</b>								<b>23.37109</b>	<b>271.0363</b>	<b>831.1678</b>	<b>25.62509</b>	<b>21.78133</b>	<b>3.843764</b>		<b>Totals:</b>	<b>14202.52</b>	<b>806.8032</b>	<b>361.6704</b>
<b>Annual Emissions for Off-Road Diesel (tpy):</b>								<b>0.011686</b>	<b>0.135518</b>	<b>0.415584</b>	<b>0.012813</b>	<b>0.010891</b>	<b>0.001922</b>		<b>Totals (lbs):</b>	<b>31311.16</b>	<b>1.778694</b>	<b>0.797346</b>

**Off-Road Gas Emissions (per year)**

Type	Number of Vehicles/ Equipment	Number of Days	Hours per Day	Years	Hours per year	gas	gal/hr	CO2 (kg/ gallon)*	CH4 (g/ gallon)**	N20 (g/ gallon)**	tanks/ hour***	Size of tank (ounces)	CO2 (kg)	CH4 (g)	N20 (g)
Stihl MS261 chainsaw	2	4	4	5	32	x	0.264063	8.78	0.5	0.22	2	16.9	74.191	4.225	1.859
Stihl HT101 Pole saw	1	4	4	5	16	x	0.375	8.78	0.5	0.22	2	24	52.68	3	1.32
Stihl HS82R hedger	2	4	4	5	32	x	0.24375	8.78	0.5	0.22	2	15.6	68.484	3.9	1.716
Stihl BG86 blower	1	4	4	5	16	x	0.232813	8.78	0.5	0.22	2	14.9	32.7055	1.8625	0.8195
97 GOODWIN 6" PUMP	2	12	8	5	192	x	3	8.78	0.5	0.22	0.05	60 (gal)	5057.28	288	126.72
												<b>Totals:</b>	<b>5285.341</b>	<b>300.9875</b>	<b>132.4345</b>
												<b>Totals (lbs):</b>	<b>11652.17</b>	<b>0.6635631</b>	<b>0.291968</b>

\* The Climate Registry 2017 Emission Factors, Table 13.1

\*\* The Climate Registry 2017 Emission Factors, Table 13.7

Abbreviations: tpy = tons per year; lbs = pounds.

**Table C-4: Overall project estimated total emissions.**

A. Project Emissions of Criteria Pollutants Compared to Northern Sonoma County APCD Air Quality Thresholds (tpy).

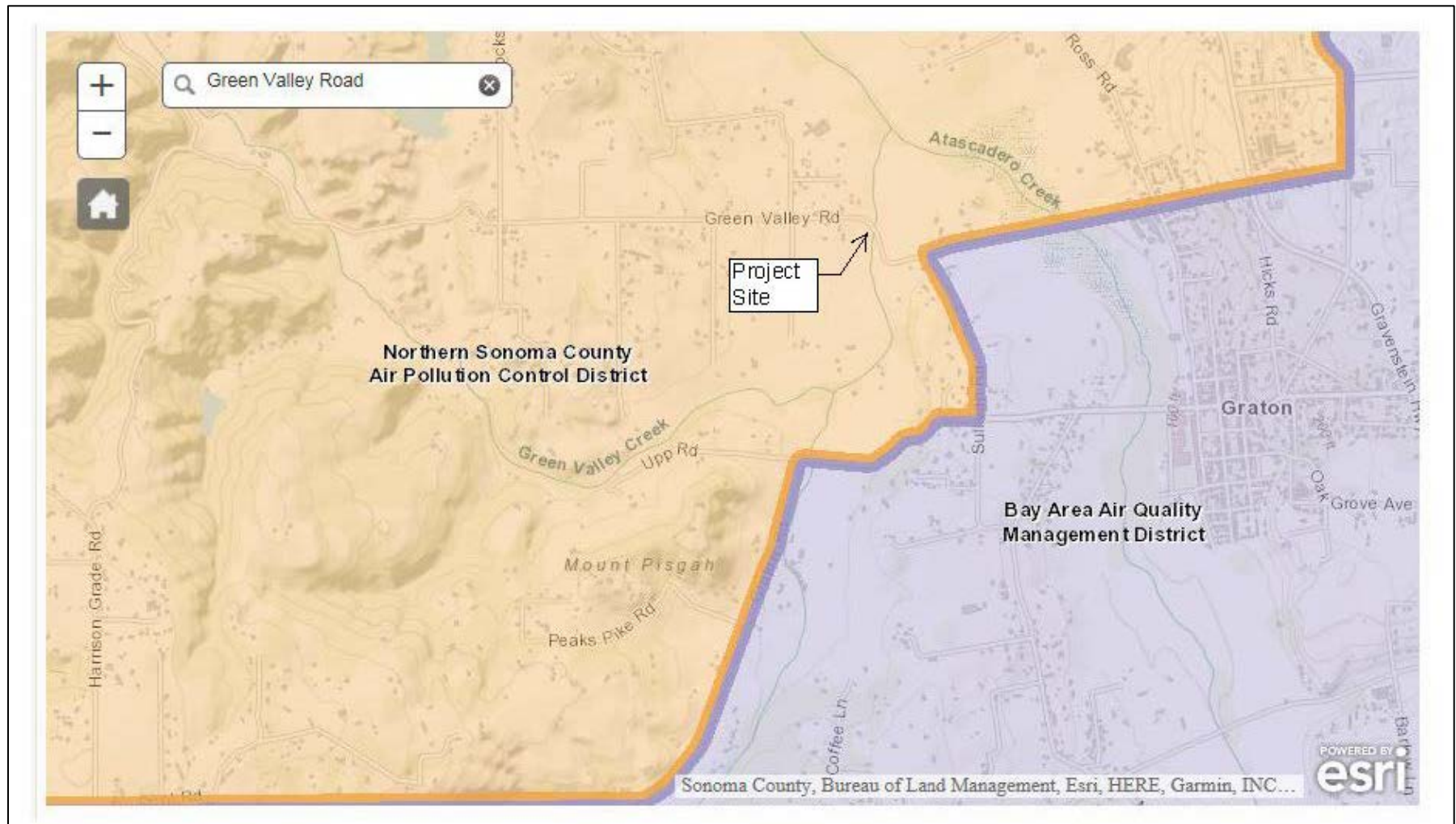
<b>Pollutant</b>	<b>Threshold</b>	<b>Project Emissions</b>	<b>Above Threshold?</b>
<b>ROG</b>	40	0.01	NO
<b>NOx</b>	40	0.44	NO
<b>PM2.5</b>	10	0.00	NO
<b>PM10</b>	15	0.01	NO
<b>CO</b>	100	0.14	NO

B. Project Emissions of Greenhouse Gases Compared to Bay Area Air Quality Management District\* Thresholds (MT CO2e per year).

	<b>CO2 (lbs)</b>	<b>CH4 (lbs)</b>	<b>N2O (lbs)</b>
<b>Emissions (lbs)</b>	67,197.04	2.50	1.13
<b>GWP</b>	1	21	310
<b>CO2e (lbs)</b>	67,197.04	52.42	351.25
<b>Total CO2e (lbs)</b>			
	67,600.71		
<b>Total (MT CO2e per year)</b>			
	30.66		
<b>Threshold (MT CO2e per year)</b>			
	1,100		
<b>Above Threshold?</b>			
	NO		

\*Northern Sonoma County APCD relies upon BAAQMD thresholds for GHG emissions.

Figure C-1: Northern Sonoma County Air Pollution Control District.





## Appendix C References

### Ref # Website Address

Accessed February 26, 2018.

- 1 <http://www.fuelly.com/car/ford/escape>
- 2 [http://www.fuelly.com/car/ford/f-350\\_super\\_duty](http://www.fuelly.com/car/ford/f-350_super_duty)
- 3 [http://www.fuelly.com/car/ford/f-550\\_super\\_duty](http://www.fuelly.com/car/ford/f-550_super_duty)
- 4 <http://www.fuelly.com/car/ford/ranger>
- 5 <http://www.fuelly.com/car/gmc/sierra>
- 6 <http://www.peterbilt.com/products/vocational/367/>
- 7 <http://www.ritchiespecs.com/specification?type=&category=Multi+Terrain+Loader&make=Caterpillar&model=289C&modelid=106145>
- 8 <http://www.ritchiespecs.com/specification?type=Co&category=Wheel+Loader&make=Caterpillar&model=950&modelid=91545>
- 9 <http://www.ritchiespecs.com/specification?type=con&category=Hydraulic+Excavator&make=Caterpillar&model=328D+LCR&modelid=92297>
- 10 [https://www.fleet.ford.com/truckbbas/topics/2012/12\\_SD\\_ChassisCabs\\_SB.pdf](https://www.fleet.ford.com/truckbbas/topics/2012/12_SD_ChassisCabs_SB.pdf)
- 11 <https://www.stihlusa.com/products/blowers-and-shredder-vacs/professional-blowers/bg86/>
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- 13 <https://www.stihlusa.com/products/hedge-trimmers/professional-hedge-trimmers/hs82r/>
- 14 <https://www.stihlusa.com/WebContent/CMSFileLibrary/InstructionManuals/STIHL-HT-100-101-130-131-Owners-Instruction-Manual.pdf>
- 15 [https://www.vermeer.com/AP/en/N/equipment/brush\\_chippers/bc1500](https://www.vermeer.com/AP/en/N/equipment/brush_chippers/bc1500)
- 16 [https://www.xylem.com/siteassets/brand-specific-content-including-catalog/godwin/godwin-resources/95-1011-3000\\_cd150m\\_us.pdf](https://www.xylem.com/siteassets/brand-specific-content-including-catalog/godwin/godwin-resources/95-1011-3000_cd150m_us.pdf)