Carnegie SVRA Roads and Sediment Basin Rehabilitation Projects

Initial Study/ Mitigated Negative Declaration

September 2011

State of California
Department of Parks and Recreation
Off-Highway Motor Vehicle Recreation Division

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Prepared for:

State of California
Department of Parks and Recreation
Off-Highway Motor Vehicle Recreation Division

Prepared by:

TRA Environmental Sciences, Inc.
545 Middlefield Road, Suite 200
Menlo Park, CA 94025
(650) 327-0429
(650) 327-4027 Fax
www.traenviro.com

MITIGATED NEGATIVE DECLARATION

Pursuant to the California State Public Resources Code and the California Environmental Quality Act (CEQA) Guidelines, the Lead Agency, the California Department of Parks and Recreation (CDPR) presents a Negative Declaration for the Roads and Sediment Basin Rehabilitation Projects at the Carnegie State Vehicular Recreation Area (SVRA). The project areas are located in Alameda County east of the City of Livermore and San Joaquin County west of the City of Tracy.

PROJECT OVERVIEW

CDPR is proposing to make improvements to and rehabilitate approximately 8.2 miles of roads and trails, 34 stream crossings, 16 gullies, and 4 low water crossings of Corral Hollow Creek. The work would affect 12.2 acres of land within the SVRA. This work is being done in order to reduce erosion and prevent sediment from reaching Corral Hollow Creek. In addition, the project involves making modifications to three sediment basins that already exist in the SVRA, namely Kiln, Tyson, and Carrol Canyon basins. The sediment basin modifications would disturb approximately 8.4 acres. The total area affected by the projects is approximately 20.6 acres.

These projects were recommended in the Corral Hollow Watershed Assessment (CHWA) prepared by Salix Applied Earthcare and Geosyntec Consultants in June 2007. Additionally, CDPR hired Fall Creek Engineering, Inc. (FCE) in 2011 to prepare preliminary engineering data for the road reconstruction and sediment basin rehabilitation project based on the results of the CHWA. The project reflects the work completed by FCE as described in an August 16, 2011 report (FCE, 2011).

FINDINGS

CDPR, having reviewed the Initial Study for the Project, finds that:

Based on the environmental evaluation presented in the Initial Study, the Project would not cause significant adverse effects related to aesthetics, air quality, agricultural resources, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, and utilities and service systems. In addition, substantial adverse effects on humans, either direct or indirect, would not occur. The Project would not affect any important examples of the major periods of California prehistory or history. Nor would the Project: cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or reduce the number or restrict the range of a rare or endangered plant or animal.

With the standard Best Management Practices (BMPs) used in the implementation of the projects as required by CDPR policy and regulations, as well as the biological resources mitigation measures listed below (BIO-1 through BIO-6), no environmental effects related to the implementation of the project would exceed stated CEQA-related significance criteria.

Impact BIO-1: Special Status Amphibians and Reptiles

Implementation of the projects would result in temporary disturbance of upland habitat that has the potential to support the California tiger salamander. The upland habitat in the project areas may contain potential aestivation sites for California tiger salamander; however, rodent burrows were not evident during site surveys. Implementation of Mitigation Measure BIO-1 would minimize potential for direct effects to California tiger salamander.

Implementation of the projects would result in the temporary disturbance of upland and basin habitats that have the potential to support the California red-legged frog. The upland habitat in the project areas may contain potential aestivation sites for the red-legged frog; however, rodent burrows were not evident during site surveys, although red-legged frog can aestivate in soil cracks or under other cover. Implementation of Mitigation Measure BIO-1 would minimize potential for direct effects to the California red-legged frog.

Implementation of the projects would result in the temporary disturbance of habitat that has the potential to support the western pond turtle. Implementation of Mitigation Measure BIO-1 would minimize direct and indirect impacts to less than significant.

Implementation of the projects would result in the temporary disturbance of habitat that has the potential to support the San Joaquin whipsnake. Implementation of Mitigation Measure BIO-1, would minimize direct and indirect impacts to less than significant.

Implementation of the projects would result in the temporary disturbance of habitat that has the potential to support the Alameda whipsnake. With the implementation of the avoidance and mitigation measures listed in Mitigation Measure BIO-1 direct and indirect impacts would be minimized to less than significant.

Implementation of the projects would result in the temporary disturbance of habitat that has the potential to support the coast horned lizard. With the implementation of Mitigation Measure BIO-1 direct and indirect impacts would be minimized to less than significant.

Two sightings of the silvery legless lizard have been reported from the Lawrence Livermore Laboratory property to the northeast of the SVRA (CNDDB 2010). No observations of silvery legless lizard occurred during site visits to the project property. Implementation of the project would result in the temporary disturbance of habitat that has the potential to support the silvery legless lizard. With the implementation of Mitigation Measure BIO-1 direct and indirect impacts would be minimized to less than significant.

Mitigation Measure BIO-1:

1. Obtain take authorization/permits or concurrence of no take from the U. S. Fish and Wildlife Service (Service) for the California red-legged frog (CRLF), and a consistency determination from California Department of Fish and Game (CDFG) for the following species that are both federally and state listed: California tiger salamander (CTS) and Alameda whipsnake. Upon completion of the authorization/permit process, CDPR shall implement the terms and conditions of the authorizations.

2. To the extent feasible, and unless approved by the wildlife agencies, all work shall occur between May 1 and November 1 to avoid the mating and breeding period(s) of CRLF and CTS. During this time, work should only occur when standing water is no longer present in the basin.

3. No more than two weeks prior to the start of construction, a Service and/or CDFG-approved biologist shall survey the project areas for CRLF, CTS, western pond turtle, Alameda whipsnake, and other special status reptiles, and their habitat. If the species are found in the project area, the biologist shall either capture and remove the animal and release it away from harm, or direct the animal away from the area of harm. The name and credentials of biologists shall be submitted to the Service for approval at least 15 days before commencement of work.

4. A Service and/or CDFG-approved biologist shall conduct a training session for all construction personnel involved in implementation of the projects. At a minimum, the training shall include a description of all of the species and their habitat, the importance of the species and its habitat, the general measures that are being implemented to protect and conserve the CRLF, CTS, western pond turtle, Alameda whipsnake, and other special status reptiles as they relate to the proposed action, and the boundaries within which the proposed action may be accomplished.

5. During work activities, all trash that may attract predators shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas. The monitoring biologist shall inspect the work site at the beginning and end of each work day to ensure all trash and debris have been properly contained.

6. All trenches, pits, or open areas shall be backfilled or plated at the end of each work day to prevent wildlife from becoming trapped. The monitoring biologist shall check all open areas each morning for entrapped wildlife. No work shall begin until the biological monitor has inspected the open areas.

7. All fueling and maintenance vehicles and other equipment and staging areas shall occur at least 20 meters from riparian habitat or water bodies. CDPR or its contractor shall ensure that contamination of habitat does not occur during such operations. Prior to the start of construction, the CDPR or its contractor shall prepare a spill prevention plan that would require prompt and effective response to any accidental spills.

8. Exclusionary fencing (silt fencing or other appropriate materials) may be required to be installed at appropriate locations along the project boundaries to prevent individual CRLF, CTS, western pond turtle, Alameda whipsnakes, or other special status reptiles from entering the work area. The need and location of the exclusionary fencing shall be determined at the pre-construction meeting with the Service and/or CDFG-approved biologist.

9. Monthly letter reports shall be submitted to regulatory agency staff which describes project status, any species found, and measures used to prevent impacts to the species.

10. To prevent amphibians and other wildlife from becoming entangled or trapped, plastic monofilament netting (erosion control matting) or similar material will not be used at the project site. Acceptable substitutes include coconut coir matting or tackified hydro-seeing compounds. If wildlife is found within the matting at any time, the matting shall be removed immediately and replaced, if necessary, with a Service and CDFG approved substitute.

Impact BIO-2: Valley Elderberry Longhorn Beetle

As many as 20 elderberry shrubs are contained within the boundary of the project areas (see Figure 8). At the Carrol Canyon Basin, the relocated trailhead associated with modification of the basin is in close proximity to a single elderberry shrub, and construction of the new trailhead may result in impact to this plant (Figure 8). One elderberry shrub is in close proximity to the Tyson sediment basin that would be modified. With respect to proposed road improvements, seven shrubs are located along the Franciscan Loop Trail and ten are located at the edge of Kiln Road. These shrubs will be impacted by road work (Figure 8). In order to mitigate the impact of removal of the twenty elderberry shrubs, CDPR would implement Mitigation Measure

BIO-2. Further mitigation and details of the relocation and mitigation planting will be determined during consultation with the USFWS under Section 7 of the Endangered Species Act.

Mitigation Measure BIO-2:

1. Obtain take authorization/permits from the USFWS for the VELB Upon completion of the authorization/permit process, CDPR shall implement the terms and conditions of the authorizations for the VELB.

2. Prior to any ground disturbing or construction activities within 100 feet of the identified elderberry shrubs, the CDPR shall consult with the U.S. Fish and Wildlife Service. CDPR shall install and maintain a 4-foot high construction fence around the perimeter of the elderberry shrub. No grading or any other ground disturbing activities shall be conducted within the fenced protected area without prior verification that the requirements of the USFWS have been satisfied including the issuance of any necessary permits or authorizations.

3. CDPR shall avoid and protect the VELB habitat (elderberry stalks one inch in diameter or greater) where feasible. Where avoidance is infeasible, CDPR shall develop and implement a VELB mitigation plan in accordance with the most current USFWS mitigation guidelines for unavoidable take of VELB habitat pursuant to Section 7 of the Federal Endangered Species Act. The mitigation plan shall include, but might not be limited to, relocation of elderberry shrubs, planting of elderberry shrubs, and monitoring of relocated and planted elderberry shrubs.

Impact BIO-3: Impacts on Nesting Birds

Golden eagles are commonly known to inhabit the SVRA properties (Elsholz and Swolgaard 2008); however, no direct or indirect effects from project activities are expected with the implementation of Mitigation Measure BIO-3. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of golden eagle habitat is anticipated.

Numerous sightings of the loggerhead shrike have been reported from within the park and on the Lawrence Livermore National Laboratory property to the northeast of the SVRA (CNDDB 2010). No observations of loggerhead shrike occurred during site visits to the project property. No direct or indirect effects from project activities are expected with the implementation of Mitigation Measure BIO-3. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of loggerhead shrike habitat is anticipated.

No direct or indirect effects from project activities are expected on the ferruginous hawk with the implementation of Mitigation Measure BIO-3. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of ferruginous hawk habitat is anticipated.

The prairie falcon is a known inhabitant of CDPR's properties surrounding the park (Elsholz and Swolgaard 2008); however, no direct or indirect effects from project activities are expected with the implementation of Mitigation Measure BIO-3. Construction equipment and vehicular access

outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of prairie falcon habitat is anticipated.

Mitigation Measure BIO-3:

All tree removal, trimming and ground disturbing activities should be scheduled to take place outside of the breeding season (February 15 to August 31). However, if activities are unavoidable during the breeding season, a qualified biologist should conduct a survey for nesting birds. If active nests are not present, project activities can take place as scheduled. If active nests are detected, CDFG should be contacted on how to proceed. Typically, a buffer would be established around the nest. CDFG usually accepts a 50-foot radius buffer around passerine and non-passerine nests, and up to a 300-foot radius for raptors.

Impact BIO-4: Impacts on the American Badger and San Joaquin Kit Fox

The American badger is a known inhabitant of CDPR's properties surrounding the SVRA (Elsholz and Swolgaard 2008). Implementation of project elements would result in the temporary disturbance of habitat that has the potential to support the badger. With the implementation of Mitigation Measure BIO-4 direct and indirect impacts would be minimized. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of badger habitat is anticipated.

The park lies within the range of the San Joaquin kit fox. However, few fox sightings have been reported in recent years. The CNDDB reports five occurrences of kit fox within five miles of the park and most of those dates were from the mid-1970s. The most recent observation, from 2002, was about 1.5 miles from the park. Most of the SVRA habitat is too steep and densely vegetated to support San Joaquin kit fox denning habitat and is not heavily used by ground squirrels.

Mitigation Measure BIO-4:

1. A survey should be completed to search for badger dens within one week prior to the start of project activities. If American badger is located on-site, potential loss of individual animals shall be avoided through active trapping and relocation of badgers to suitable off-site habitat by a qualified biologist and in coordination with the CDFG, as approved by CDFG.

2. Obtain take authorization/permits or concurrence of no take from the U. S. Fish and Wildlife Service (Service) and a consistency determination from California Department of Fish and Game (CDFG) for the San Joaquin kit fox. Upon completion of the authorization/permit process, CDPR shall implement the terms and conditions of the authorizations.

Impact BIO-5: Impacts on Special Status Bats

Two sightings of the pallid bat have been recorded less than 5 miles away from the SVRA (CNDDB 2010). No observations of pallid bat or roosts were observed during site visits. No direct or indirect effects from project activities are expected with the implementation of Mitigation Measure BIO-5. Construction equipment and vehicular access outside of the project areas will

be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of pallid bat habitat is anticipated.

The Townsend's big-eared bat is a known resident of the SVRA properties (Elsholz and Swolgaard 2008); however, no direct or indirect effects from project activities are expected with the implementation of the Mitigation Measure BIO-5. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of Townsend's bit-eared bat habitat is anticipated.

Mitigation Measure BIO-5:

Pre-Construction Survey. A qualified biologist ("bat biologist") shall be retained to conduct a pre-construction survey for roosting bats in any trees that are to be removed. If no roosting bats are found, no further mitigation is required. If a bat roost is found, the following measures shall be implemented to avoid impacts to roosting bats.

Avoidance. If non-breeding bats are found in a tree to be removed, the individuals shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity. Demolition should then follow at least one night after initial disturbance for airflow. This action should allow bats to leave during darkness, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight.

Special-Status Bats. If special-status bats are found in tree to be removed, a bat nest box plan for the project areas shall be developed and state-of-the-art bat nest box technology would be employed. A qualified bat biologist would be asked to review the design and placement of nest boxes.

Impact BIO-6: Impacts on Special Status Plants:

No direct or indirect effects from project activities are expected on the big tarplant with the implementation of Mitigation Measure BIO-6. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of big tarplant habitat is anticipated.

Mitigation Measure BIO-6:

Focused plant surveys shall be conducted to determine if big tarplant is present within any of the specific work areas. One to two site visits may be necessary to intercept this species during its flowering period. If the plant is found, every effort should be made to avoid the species. If avoidance is not possible, attempt relocation to a risk-free location, or, in consultation with experts, determine another means to mitigation for the loss of the plant/s, such as obtaining seeds from other sources and planting seedlings in risk-free areas.

CARNEGIE SVRA ROADS AND SEDIMENT BASIN REHABILITATION PROJECTS
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

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CHAPTER 1 INTRODUCTION AND REGULATORY GUIDANCE

1.1 INTRODUCTION AND REGULATORY GUIDANCE

This Initial Study (IS) and Mitigated Negative Declaration (MND) have been prepared by the Off-Highway Motor Vehicle Recreation (OHMVR) Division of the California Department of Parks and Recreation (CDPR) for work being proposed at the Carnegie State Vehicle Recreation Area (SVRA). This IS evaluates the potential environmental effects of two projects within the properties. The SVRA is located in Alameda and San Joaquin Counties, California (Figure 1). The first project involves making improvements to and rehabilitating 8.2 miles of roads and trails, 34 stream crossings, 16 gullies, and 4 low water crossings of Corral Hollow Creek. The work would affect 12.2 acres of land within the SVRA. This work is being done in order to reduce erosion and prevent sediment from reaching Corral Hollow Creek. The second project involves making modifications to three sediment basins that already exist in the SVRA, namely Kiln, Tyson, and Corral Canyon. The sediment basin modifications would disturb approximately 8.4 acres. The total affected by the projects is approximately 20.6 acres.

These projects were recommended in the Corral Hollow Watershed Assessment (CHWA) prepared by Salix Applied Earthcare and Geosyntec Consultants in June 2007. Additionally, CDPR hired Fall Creek Engineering, Inc. (FCE) in 2011 to prepare preliminary engineering data for the road reconstruction and sediment basin rehabilitation project based on the results of the CHWA. The project reflects the work completed by FCE as described in an August 16, 2011 report (FCE, 2011).

The California Environmental Quality Act (CEQA); Public Resources Code § 21000 *et seq.*) and the CEQA Guidelines (14 CCR §15000 *et seq.*) establish the OHMVR Division as the lead agency. The lead agency is defined in CEQA Guidelines section 15367 as “the public agency which has the principal responsibility for carrying out or approving a project.” The lead agency decides whether an Environmental Impact Report (EIR) or Negative Declaration (ND) or Mitigated Negative Declaration (MND) is required for the project and is responsible for preparing the appropriate environmental review document.

According to CEQA Guidelines Section 15070, a public agency shall prepare a proposed ND or a MND when:

1. The IS shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or,

2. The IS identifies potentially significant effects, but:

    a. Revisions in the project plans made before a proposed MND and IS are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and

    b. There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

This IS has been prepared by the OHMVR Division of CDPR in accordance with CEQA and the CEQA Guidelines.

1.2 LEAD AGENCY CONTACT INFORMATION

The lead agency for the proposed project is the OHMVR Division of CDPR, the agency that would be approving and carrying out the project. The contact person for the lead agency regarding the project and questions or comments regarding this IS/MND should be submitted to:

Jennifer Buckingham Garcia, District Services Manager, Twin Cities District
California Department of Parks and Recreation, Off-Highway Motor Vehicle Recreation Division
Address: 13300 White Rock Road, Rancho Cordova, CA 95742
Phone: (916) 985-1096
Email: jbuck@parks.ca.gov

1.3 PURPOSE AND DOCUMENT ORGANIZATION

The purpose of this document is to evaluate the potential environmental effects of the roads, creek crossings and sediment basin rehabilitation projects at the Carnegie SVRA.

This document is organized as follows:

- Chapter 1 – Introduction and Regulatory Guidance

  This chapter provides an introduction to the project and describes the purpose and organization of this document.

- Chapter 2 – Project Description

  This chapter describes the project location, project area, site description, objectives, characteristics and related projects.

- Chapter 3 – Environmental Checklist and Responses

  This chapter contains the Environmental (IS) Checklist that identifies the significance of potential environmental impacts (by environmental issue) and provides a brief discussion of each impact resulting from implementation of the proposed project. This chapter also contains the Mandatory Findings of Significance.

- Chapter 4 – References

  This chapter identifies the references and sources used in the preparation of this IS/MND.

- Chapter 5 – Report Preparation

  This chapter provides a list of those involved in the preparation of this document.

1.4 REQUIRED PERMITS, APPROVALS, OR AUTHORIZATIONS

U.S. Army Corps of Engineers (Corps) 404 Permit. A preliminary jurisdictional delineation of the project waters and wetlands was prepared for the entire SVRA. The Corps confirmed jurisdiction of the waters and wetlands affected in April 2010. The presence of jurisdictional waters means that any activities that would cause impacts to those waters require a permit from the Corps. Information about the quality and quantity of the aquatic resources that would be affected by the

proposed activity, the types of impacts that are expected to occur, and compensatory mitigation, are obtained by the Corps during the processing of an individual permit application, a letter of permission or a pre-construction notification for reporting Nationwide Permits (NWP).

The NWP program streamlines the evaluation and approval process for certain types of activities that have only minimal impacts to the aquatic environment. There are 49 types of NWPs, several of which could apply to activities required in the study area (see http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/nwp.html). In order to qualify for an NWP the project must meet certain conditions, including no significant impacts to endangered species. Many NWPs require a Pre-construction Notification. Projects that do not qualify for the NWP program require an individual permit or a Letter of Permission (LOP).

Individual permits (IPs) are generally reserved for projects with potential for substantial environmental impacts. An IP requires a full public interest review, including public notices and coordination with involved agencies, interested parties and the general public. Another type of individual permit used for very minor impacts and in special circumstances is the LOP.

An LOP authorizes certain fill activities pursuant to Section 404 of the Clean Water Act that have an overall minimal impact to the aquatic ecosystem. The LOP uses an abbreviated processing procedure and can only be used for those projects where the applicant provides evidence of thorough pre-application coordination among the regulatory and resource agencies. The project must comply with the CWA Section 404(b)(1) Guidelines and other program objectives and propose effective mitigation for unavoidable impacts. Pre-application coordination with the Corps, the U.S. Fish and Wildlife Service (USFWS), the Regional Water Quality Control Board (RWQCB), and CDFG is required. The following information should be provided to the agencies at least two weeks before a meeting, particularly the Corps' monthly meeting: a preliminary jurisdictional delineation of the project area verified by the Corps; a site location and plan view of the project showing areas and acreage to be impacted; a draft report addressing the Section 404(b)(1) Guidelines; and at least a conceptual draft mitigation plan.

U. S. Fish and Wildlife Service. The United States Endangered Species Act (ESA) is administered by the United States Fish and Wildlife Service and NOAA Fisheries. The Federal endangered species acts provide protection for listed species. In particular, it prohibits "take". "Take" is defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect a federally listed, endangered species of wildlife, or to attempt to engage in any such conduct." Federal regulations also define take to include the incidental destruction of animals in the course of an otherwise lawful activity, such as habitat loss due to development. Under those rules the definition of take includes significant habitat modification or degradation that actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR Section 17.3).

Federally listed threatened and endangered species are known and/or have the potential to occur within the project area. Any impact caused to the listed species from project activities would be considered “take” under federal law. “Take” can only be permitted through Section 7 or Section 10 consultation with the U.S. Fish and Wildlife Service. Section 7 deals with actions that require issuance of a permit, funding, or other authorization from a federal agency. In the case of roads, trails, low water crossing and sediment basin rehabilitation projects, the fact that the Corps has jurisdiction over the waters and wetlands in the project area and would issue a permit for the project means that the Corps must consult with the USFWS regarding the listed species.

Regional Water Quality Control Board (RWQCB). The 1972 amendments to the federal Clean Water Act (CWA) prohibit the discharge of pollutants to navigable waters from a point source,

unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit (see further discussion below). Industries that have direct storm water discharges to navigable waters are required to obtain permits. It is within the existing authority of the Regional Water Quality Control Board (RWQCB) to issue water quality certifications under Section 401 of the CWA and to issue an NPDES permit for any storm water outfall to the waters of the United States under Section 402 of the CWA.

The function of the Water Quality Certification (WQC) program is to protect these waters by ensuring that waste discharged to these waters meets state water quality standards. The WQC program regulates dredge and fill activity that results in any discharge to waters of the U.S. These projects require a federal permit under Clean Water Act (CWA) §404. Pursuant to §401 of the CWA, any applicant for a federal license or permit for activities that may result in any discharge into waters of the U.S. shall provide the federal permitting agency (i.e., Army Corps of Engineers) with a certification from the respective State.

The NPDES was established in the CWA to regulate both point source discharges (a municipal or industrial discharge at a specific location or pipe) and non-point source discharges (diffuse runoff of water from adjacent land uses) to surface waters of the United States. Section 402 of the CWA contains general requirements regarding NPDES permits. The current NPDES provisions, under Phase II of the amendments to the Clean Water Act, require permits for construction activities that would disturb one or more acres of land. These permits serve as the mechanism for enforcement of the program.

The RWQCB requires that an NPDES Permit be obtained for construction grading activities for all projects greater than one acre. This permit requires implementation of non-point source control of storm water runoff through the application of a number of Best Management Practices (BMPs). BMPs typically used to manage runoff water quality include controlling roadway and parking lot contaminants by installing oil and grease separators at storm drain inlets, cleaning parking lots on a regular basis, incorporating peak-flow reduction and infiltration features (such as grass swales, infiltration trenches, and grass filter strips) into landscaping, and implementing educational programs. These practices are meant to reduce the amount of constituents entering streams and other water bodies.

The projects are regulated under the WQC program and the NPDES Permit program. They would require water quality certification from the Central Valley RWQCB and would require a General Permit for Discharge of Storm Water Associated with Construction Activities because they involve disturbance to over one acre of land. The General Construction Activity NPDES permit requires the development of a Storm Water Pollution Prevention Plan (SWPPP), which is required to identify the sources of sediment and other pollutants on-site, and to ensure the reduction of sediment and other pollutants in storm water discharged from the site. A monitoring program is required to aid the implementation of, and assure compliance with, the SWPPP. The permit requirements of the RWQCB must be satisfied prior to project construction.

California Department of Fish and Game (CDFG)

CDFG administers two regulations that pertain to the projects -- the California Endangered Species Act (CESA) and the California Fish and Game Code Section 1602 which requires CDFG notification if a project could alter a streambed (also referred to as a Streambed Alteration Agreement). The CESA states that all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. However, CESA also allows for take

incidental to otherwise lawful development projects. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project caused losses of listed species.

Section 2080 of the Fish and Game Code prohibits "take" of any species that the commission determines to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

CESA allows for take incidental to otherwise lawful development projects. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project caused losses of listed species populations and their essential habitats.

California Fish and Game Code Section 1602 requires an entity (“applicant” hereafter) to notify CDFG of any proposed activity that may substantially modify a river, stream, or lake. Notification is required by any person, business, state or local government agency, or public utility that proposes an activity that would:

- substantially divert or obstruct the natural flow of any river, stream or lake;
- substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or
- deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The notification requirement applies to any work undertaken in or near a lake, river, or stream, including any bed and channel with a perennial, intermittent, subsurface or ephemeral flow. It may also apply to work undertaken within the flood plain of a body of water.

If CDFG determines that the activity may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement (Agreement) would be prepared. A draft agreement must be provided within 60 days (see Fish and Game Code section 1603). The Agreement includes reasonable conditions necessary to protect those resources and must comply with the California Environmental Quality Act (CEQA). The applicant may proceed with the activity in accordance with the final Agreement.

CHAPTER 2 PROJECT DESCRIPTION

2.1 PROJECT LOCATION AND DESCRIPTION

The 1,500+ acre SVRA is located off of Corral Hollow-Tesla Road and is 15 miles east of Livermore, CA. The legal location is Township 3 South, Range 4 East, Section 31 and Township 4 South, Range 4 East, Section 6, Mount Diablo Base Meridian, on the Cedar Mountain, CA (1994) USGS topographical quadrangle. Park elevations range from 650 to 1,750 feet above sea level.

2.2 NEED FOR ROAD RECONSTRUCTION PROJECT

2.2.1 ROAD/TRAIL EROSION

From 2004 to 2006, Salix and Geosyntec conducted extensive field surveys of the existing access roads and trails within the SVRA and the recently acquired Tesla and Alameda properties for the CHWA. The erosion inventory protocol was developed specifically for the Corral Hollow watershed and Carnegie SVRA. The inventory process that was developed involved a geomorphic analysis of existing and natural drainage patterns, anthropogenic alterations to the landscape, and determination of mitigation strategies that could reduce erosion and sedimentation on a watershed scale.

Improperly designed roads and trails can significantly contribute to erosion and sediment mobilization by altering the natural drainage patterns of the watershed. They can inadvertently function as conveyance features by collecting runoff from upland slopes and diverting it away from its natural drainage course. The runoff is often concentrated on the inboard side of the trail where it can cause significant erosion, especially where the trail is not surfaced. In the Corral Hollow watershed, the primarily pollutant is sediment and the ultimate delivery point is Corral Hollow Creek.

These flows can cause additional erosion at the point where the concentrated flow is released. Furthermore, the increased energy associated with the concentrated flows can also cause soil piping where the concentrated flow paths contact a weakness in the trail or an existing animal burrow.

The following access roads and trails were inventoried:

- Tesla Mine Road
- Franciscan Loop Trail
- Pottery Loop Trail
- Juniper Trail (upper portion)
- Juniper Trail (lower portion)
- Kiln Canyon Trail
- SRI Road
- Los Osos Road

Each of these access roads was inventoried based on a number of physical characteristics that influence trail erosion. Access roads and trails inventoried are wide enough to accommodate emergency vehicles and are readily accessible from most areas of the park. The trails were also assessed for past sediment loss and current erosion potential. Each of the inventoried features is discussed below:

- Grade and Width: The grade represents the longitudinal slope of the trail. Steeper grades often contribute to higher runoff velocities and are more susceptible to erosion than flatter grades. The trail width was also approximated during the inventory.

- Exiting Drainage: Trail and roadway drainage can significantly influence existing and potential erosion issues by dispersing, diverting, or concentrating flow. During the inventory, a number of drainage techniques were observed including insloping, outsloping, and crowning. Insloped trails are sloped to drain into the existing terrain and often contribute to channelized flow on the inboard side of the trail. Outsloped trails are sloped with the existing terrain and help in maintaining the natural drainage patterns of an area. Crowned trails are raised in the center and drain to both sides of the trail. These are commonly seen along ridge lines. Other drainage features, such as culverts, water bars and dips are designed to drain runoff from the trail at a single location.

- Erosion Potential: Erosion potential represents the susceptibility of a trail to erosion. Trails with steep slopes, loose surface material, and poor drainage characteristics are more susceptible to erosion than flat stabilized trails that are properly drained. Each trails segment was characterized as having a high, medium, low/medium, or low erosion potential.

- Delivery Potential: Delivery potential represents the probability of eroded material reaching the receiving waters. Trails that directly drain to receiving waters, ditches, or swales exhibit a high delivery potential. Delivery potential is reduced by features that enhance sediment removal such as flat grades, vegetation, and sedimentation BMPs. A gully is an example of a feature having a high delivery potential as the gully is formed by flowing water (usually highly concentrated flows) that flow into receiving waters. Delivery potential is based on a scale of 0% to 100% (with 100% representing the highest delivery potential).

- Past Volume: Past volume represents an approximation of the amount of sediment that has been eroded from a section of trail. When calculating the past volume, a value of 2 cubic yards per 100 feet was assigned to each visible rill. For example, a 200-ft trail with 3 visible rills lost approximately 12 cubic yards of material due to erosion. Slight alterations were made in the sediment loss calculations depending on the size of each rill.

The trails were divided into segments (delineated by a beginning and ending route number) based on similar physical and erosive characteristics. Table 13-1 of the CHWA presents the characteristics of each trail that was inventoried. Appendix F of the CHWA presents the locations and route identification numbers for each trail. All of the trails inventoried are shown in Figure 2.

The CHWA provides documentation that each of the access roads (with the exception of SRI Road) has lost a significant amount of sediment due to erosion. Erosion impacts are compounded when trails also exhibited a high delivery potential since the eroded material is likely transported to Corral Hollow Creek.

2.2.2 EROSION AT TRAIL/STREAM CROSSINGS

Stream crossings represent the point on a trail or roadway that intersects a natural drainage path. The high velocities associated with the runoff as it flows through a crossing can cause significant erosion. Improperly designed crossings can damage trails and divert runoff to sensitive areas of the watershed that can be easily eroded.

Stream crossings were identified along the access roads and trails that were evaluated during the trails inventory portion of the CHWA. Each crossing was characterized based on its erosion potential, delivery potential and past sediment loss. The stream crossings were also characterized based on the following crossing size and diversion characteristics:

- Crossing Size: The crossing size indicates the amount of material that could potentially be eroded if the slope and geometry of the natural drainage path where reestablished. Crossing sizes are characterized as small (0 to 50 yd3), medium (51 to 250 yd3), or large (greater than 251 yd3). Small crossings are typically seen on narrow trails that intersect relatively flat natural drainage courses. Large crossings are often seen on wide trails that intersect steep drainage courses.

- Diversion: Diversions occur when flows from a natural drainage path meet a trail and are diverted away from the down gradient portion of the drainage path. Diversions can develop where an insloped trail meets a stream crossing or where a rill has formed in the trail that conveys runoff down the trail rather than across it. Diversions are undesirable because they concentrate runoff and can contribute to erosion down gradient from the stream crossing.

- Diversion Potential: Diversion potential represents the likelihood that flows from a natural drainage path will be diverted down the road or trail from the down gradient portion of the drainage path. Evidence of rill formation on the road or trail surface can be an indicator of a higher diversion potential.

The CHWA presents the characteristics and locations of each stream crossing that was inventoried. According to the CHWA, all stream crossings that were currently diverted (with the exception of stream crossings along SRI Road) contributed to some degree of sediment loss. Conversely, stream crossings that were not diverted did not contribute to any appreciable amount of sediment loss.

Crossings with well-maintained culverts exhibited the least amount of sediment loss. However, past sediment loss was often very high when the culverts were not maintained. The results from the stream crossings inventory were used to prioritize the rehabilitation needs of each crossing.

2.3 NEED FOR SEDIMENT BASIN IMPROVEMENTS

There are a number of sediment basins or stock ponds located throughout the SVRA that have been used to reduce sediment loads into Corral Hollow Creek. Salix and Geosyntec conducted a preliminary field inspection of each basin for the CHWA to determine if the basins were properly designed, maintained, and effective at reducing sediment mobilization. A preliminary assessment of the structural stability of each basin was also conducted to determine if detailed geotechnical inspections were warranted. The following basins were considered to have high priority for modifications to improve their ability to control and reduce sedimentation to Corral Hollow Creek.

2.3.1 KILN BASIN

Kiln Canyon Basin is located within the Kiln Canyon drainage area and is approximately 1,500 feet south of Corral Hollow Creek (Figure 2). The pond receives flows from approximately 345 acres (or 90%) of the 385-acres drainage area. The outlet structure of the basin consists of a slotted 24" Corregated metal pipe riser with a grated overflow. The basin's spillway consists of a compacted earthen berm that armored with failing concrete. Flows from the basin enter the natural drainage path of Kiln Canyon and eventually discharged to Corral Hollow Creek.

An earthen access road had been constructed along the western side of the basin so that maintenance vehicles and equipment could access the floor of the basin for sediment removal and basin repairs. However, the access road appeared to be concentrating flows and causing erosion within the pond. And, due to the clay soils in the area, the access road did not appear to provide proper traction for the maintenance vehicles.

Photo 1: Kiln Canyon Basin

Photo 2: Kiln Canyon Basin

2.3.2 TYSON'S BASIN

Tyson's Basin is located near the Carnegie SVRA maintenance shop, approximately 400 feet south of Corral Hollow Creek (Figure 2). The basin was constructed adjacent to and partially within a historic mine shaft and tailing pile. These mine features are located along the southwest edge of the basin. The outlet structure of the basin consists of a perforated corrugated metal pipe located near the northern bank. The pipe discharges at the base of a gabion wall that comprises the basin's northern wall and spillway. As of April 2006, the western abutment of the spillway was being undermined by flows (soil piping) from the basin. Preliminary evaluations of the spillway indicated that it could potentially fail during a high intensity or long duration event. During a field investigation of the basin in May 2005, sediment accumulation had almost reached the top of the CMP riser and flows were passing through the basin with little-to-no detention time or retention. In October 2005, the sediment within the basin was removed, creating six feet of dead storage (depth from the invert of the pond to the CMP riser outlet). During the 2006 wet season, the basin appeared to be functioning as a proper sediment basin and was able to completely detain the flows from the smaller, more frequent rainfall events. However, the basin is not designed to remove the large fluxes of sediment generated from the entire Tyson's Basin drainage area. Additionally, there are no measures (such as baffles) constructed which can increase detention time. Therefore the ability to allow settlement of fine particles and reduce turbidity are greatly reduced.

Photo 3: Tyson's Basin in May of 2005

Photo 4: Tyson's Basin Cleaned in October of 2005

2.3.3 CARROL CANYON BASIN

Carrol Canyon Basin is located at the outlet of the Carrol Canyon drainage area, approximately 200 feet south of Corral Hollow Creek and approximately 1000 feet southeast of the SVRA kiosk and park entrance (Figure 2). The outlet structure consists of a corrugated metal pipe riser located near the northern bank of the basin. The riser routes flows to a rock lined earthen drainage channel that discharges to Corral Hollow Creek. Flows from the outlet pipe appear to be contributing to erosion within the earthen drainage channel. The spillway of the basin consists of reinforced rock and earthen berm on the northeast face of the basin. During large rainfall events, high flows discharge over the earthen berm or inundate the trail west of the basin.

During a field investigation of the basin in May of 2005, accumulated sediment was near the top of the corrugated metal pipe riser. The basin did not have the capacity to retain additional sediment or detain flows. The detention time and length to width ratio are minimal. Consequently, the basin is ineffective in removing fine sediments from the runoff. As with Tyson's Basin, the accumulated sediment within Carrol Canyon Basin was removed in September 2005, which created five feet of dead storage. However, the basin appeared to be too small to properly treat runoff from the entire Carrol Canyon drainage area.

Photo 5: Carrol Canyon Basin

Photo 6: Carrol Canyon Basin

2.4 DETAILS OF ROAD RECONSTRUCTION PROJECT

In 2011, CDPR hired Fall Creek Engineering, Inc. (FCE) to prepare preliminary engineering data for the road reconstruction and sediment basin rehabilitation project based on the results of the CHWA. According to an August 16, 2011 report, FCE proposes to improve 8.2 miles of road to improve access and reduce sediment loading.

The roads scheduled for rehabilitation include sections of Kiln Canyon, Los Osos, Juniper, Lower Juniper, Franciscan Loop East and West, and Pottery Loop. The roads will be maintained at a width of 10 to 12 feet. The main road improvements presented in the design plans include surfacing, re-alignment, several types of rolling, terrain and armored dips, and various stormwater BMPs.

2.4.1 DIFFERENT TYPES OF IMPROVEMENTS

The following describes the different types of improvements proposed for the project.

Road Surfacing – FCE proposes to resurface the roads with a compacted base rock material (1 ½-inch minus). In some areas, where the soils have a high clay content, the road surfacing will include an additional layer of compacted sub-base (1 ½-inch aggregate). By surfacing the roads with base material, emergency access can be maintained during the rainy season, and sediment loading from the roads will be minimized.

Re-Alignment – FCE proposes to re-align several sections of road to improve grades and/or drainage. In these areas the road will be offset from the existing road and the existing road will be rehabilitated and revegetated.

Outsloping – FCE proposes to outslope the majority of the improved roads. An outsloped road is one that is gently sloped towards the outer edge of the road. Runoff from the roads will be allowed to sheetflow over an adjacent native or stabilized vegetated area. In some areas where outsloping is not feasible (such as a climbing turn) insloping with a culvert crossing, or crowned roads are recommended.

Rolling Dips – FCE proposes to improve rolling dips to collect surface runoff from the road and direct it across the road. The rolling dips will direct water off of the road surface in areas where the road grade exceeds the outslope gradient and/or the road has a long straight slopes. The bottom of the dip is usually 2-6 feet wide and is usually angled 0-25 degrees from perpendicular to the road surface. The total length of the rolling dip, including the bottom, ranges from 30 to 60 feet. Surface runoff will then travel downslope over adjacent natural or stabilized and vegetated areas.

Terrain Dips or Armored Terrain Dips – FCE proposes to install terrain dips or armored terrain dips in several road sections. Terrain Dips of Armored Terrain dips are geometrically the same as rolling dips however, they are located at natural drainage crossings. Armored terrain dips are usually lined with compacted aggregate, concrete, or some type of paver to reduce scour and erosion within the crossing.

2.4.2 ESTIMATED GRADING VOLUMES FOR ROAD RECONSTRUCTION AND ROAD CROSSING PROJECT

FCE developed topographic grading models for each road. These models provided the information necessary to estimate grading volumes. The grading volumes are presented in Table 1.

Table 1. Preliminary Grading Volumes

Road	Cut (CY)	Fill (CY)	Net(CY)
Kiln Canyon	3,665	10,380	6,715
Los Osos	2,830	1,080	1,750
Juniper	7,940	1,840	6,100
Lower Juniper	485	65	420
Franciscan Loop East	800	150	650
Franciscan Loop West	980	850	130
Pottery Loop	2,320	1,010	1,310
Total	**19,020**	**15,375**	**3,645**

2.4.3 DETAILS OF THE SEDIMENT BASIN IMPROVEMENT PROJECT

Several sediment basins are located throughout Carnegie SVRA and are intended to reduce sediment loads to Corral Hollow Creek. FCE proposes improvements to three of the sediment basins: Kiln, Tyson and Carrol Canyon Basins. The improvements for Kiln, Tyson, and Corral Canyon basins are shown in Figures 3 to 5, respectively. Figure 6 provides the details of the improvements for all three basins.

FCE proposes new multi-celled basins at each of the three locations. The proposed basins will increase the overall detention volume and have been sized to detain the 90th percentile 24-hour storm event. The basins have been designed to function in series via gravity flow. A hydraulic model has been prepared and the methodology and results are presented in the 'Hydrologic and Hydraulic Analysis, Proposed Sediment Basins" prepared by Fall Creek Engineering, dated August 22, 2011.

Flow from the natural channel will be diverted from the existing drainage channel into each basin using an inlet diversion structure. The inlet diversion structure will be designed using slide gates that will direct the majority of runoff and sediment into the new basins and bypass excess flows to Corral Hollow Creek via a grass lined swale.

The basins will be constructed with earthen berms and in some areas excavated to attain an effective depth of 6 feet. The top of the berm will be approximately 10 feet wide to provide access to the basins for routine maintenance and sediment removal. The berm slopes will be shaped to a slope of 2H:1V. An overflow outlet will be located 6 feet above the bottom of the basin. Each basin will have an additional two feet of freeboard for an overall depth of 8 feet. The berms on the creek side of the basins will include a bench at approximately four (4) feet from the top of the berm. The bench will be approximately 10 feet wide and planted with native vegetation. The lower portion (approximately 4 feet) of the berm will be reinforced with rip rap.

The primary outlets for each basin will be skimmers, which are designed to take only the cleanest water from the top portion of the water column. FCE anticipates that two 8" skimmers will provide adequate capacity to convey runoff through the basins while capturing the majority of sediment.

An overflow outlet will be installed to provide additional outflow capacity, if needed. The overflow pipe outlet will include a 24-inch diameter stand pipe with perforations located six (6) feet from the bottom of the basin (2 feet from the top of berm). The spillway and skimmers will be directed into rock lined swales that will convey treated runoff to Corral Hollow Creek.

Channel realignment is proposed for Corral Hollow Creek at two of the three basin locations and includes Kiln Canyon Basins and Carrol Canyon Basins. The creek realignment will shift the creek to the north approximately 50 to 80 feet.

At the two locations where channel realignment is proposed, new creek crossings are also proposed where the road/trail crosses Corral Hollow Creek. The creek crossing proposed for Kiln Canyon is a precast three sided bridge with wing walls (Figure 7 (1)). The three sided bridge has a natural creek bottom that will allow for sediment and debris to move through the channel. The creek crossing proposed for Carrol Canyon is a low creek crossing (ford) that will include a low spot in the channel where water will flow over the road surface (Figure 7 (2)). The ford crossing will be armored with a paver system (possibly articulate concrete block) to support large service and emergency vehicles.

Topographic grading models were developed for each basin to provide the information necessary to estimate grading volumes. The grading volumes are presented in Table 2.

Table 2. Preliminary Grading Volumes

Basins	Cut (CY)	Fill (CY)	Net (CY)
Kiln	520	15,853	15,333
Carrol	1,032	12,159	11,127
Tyson	7,165	8,985	1,820
Total	**8,717**	**36,997**	**28,280**

2.5 CORRAL HOLLOW CREEK LOW WATER CROSSINGS

Three of the existing low water crossings of Corral Hollow Creek, (at Pottery Loop Road, Middle Track Road, and Los Osos Road), would be replaced with longer crossings. Each would require the use of heavy equipment within the Ordinary High Water Mark (OHWM) to remove the existing crossing. At each crossing, a new section of articulated concrete block (Armorflex 50S) 24-feet wide by 140-feet long would be placed over a compacted subbase, covered by a geotextile liner, and filled in with 12 to 16 inches of 1.5-inch aggregate drain rock. Each crossing would extend 15 to 20 feet outside of the creek channel on either side of the creek. The construction area at each crossing may extend 19 feet upstream and 28 feet downstream of the existing crossing. Details of the modified low water crossings are shown in Figure 7 (2).

The purpose of the improvements to the residence access road is to reestablish an access route to a water treatment plant and residential unit. The access road, which crossed over several culverts, was washed out by a series of storm events earlier this year. To reestablish access to these facilities, a new culvert will need to be installed. In order to minimize the likelihood of another wash out, the culvert size will be increased to 24’ x 13’ x 6’. The bedding and area of disturbance for the culverts will be approximately 2400 ft^3 (30’ x 40’ x 2’). Approximately 2 ft of excavation will need to occur within the 1200 ft^2 project area to provide a bed for the culverts to rest. The bedding will consist of 6” of 1.5” aggregate layered with 6” of 1” material on top. The culvert will be placed on top of this bedding. On top of the culverts, 2’ of road base will be layered and asphalt will cap the top of this material. Currently, the old culverts are still in place but the road has been washed away. These old culverts will need to be removed. The work will be performed in dry conditions to avoid injuring amphibians or harming water quality. The edges of the inlet will be armored with rip rap to help minimize erosion. No construction materials will be stored in the channel. Once complete, any loose material dislodged during construction (such as sediment or rock), will be stabilized.

2.6 CONSTRUCTION PROCESS AND SCHEDULING

Construction will occur once dry conditions are forecast, during the period between April 15th and October 15th, 2012. Construction fencing and/or trail closure will occur for the section of the project currently under construction.

The overall areas of disturbance for the Road Improvements are presented in Table 3.

Table 3. Area of Disturbance, Road Improvements

Road	Area of Disturbance (SF)	Area of Disturbance (Ac)
Kiln Canyon	82,440	1.89
Los Osos	92,800	2.13
Juniper	171,800	3.94
Lower Juniper	13,660	0.31
Franciscan Loop East	31,100	0.71
Franciscan Loop West	55,600	1.28
Pottery Loop	84,800	1.95
Total	**532,200**	**12.22**

The area of disturbance for each series of basins is presented in Table 4 and includes the basins, berms, grass swales, and channel re-alignment when necessary.

Table 4. Areas of Disturbance, Basin Improvements

Basins	Area of Disturbance (SF)	Area of Disturbance (Ac)
Kiln	139,042	3.19
Carrol	129,673	2.98
Tyson	96,088	2.21
Total	**364,803**	**8.37**

The construction process, phasing, and scheduling will be similar for all project areas. In general, construction in each project area will involve the following activities:

1. Mobilization and setup
2. Potholing and locating existing utilities
3. Rough Grading, excavation, and off-haul of excavated soils and construction debris
4. Trenching for installation of new piping, and culverts
5. Installation of erosion control measures, revegetation of all disturbed areas
6. Surfacing of roads, including sub-base and base material
7. Finish Grading and off-haul of excavated soils and construction debris;

It is anticipated that several trees will need to be removed as part of the overall project. Efforts will be made to protect and keep as many trees as possible. Currently the total number of trees scheduled for removal includes 33 trees/shrubs with a possible removal of up to 30 additional trees/shrubs.

2.7 PROJECT BEST MANAGEMENT PRACTICES

The following general BMPs would be incorporated into the projects depending on the site conditions at the time of the work. Specific BMPs would be determined by the contractors in consultation with CDPR and its consultants.

Construction BMPs

- Erosion controls (hydraulic mulch, tackifiers, and straw mulches)
- Sediment Controls (Fiber rolls, silt fence, perimeter controls, stockpile management, and gravel bag berms)
- Non-storm water BMPs (scheduling, tracking controls, dust abatement, waste management, containment of portable toilets, and vehicle fueling and maintenance)
- Run-on control (if needed, diversion berms and slope drains)

A Department Archaeologist will be consulted prior to starting work to determine the need for on-site monitoring.

Post-Construction BMPs

- Erosion control (vegetation establishment as possible)
- Run-on control (road re-design for minimized road degradation, drainage ditches and slope drains as necessary)

2.8 RELATED PROJECTS

2.8.1 MITCHELL RAVINE RESTORATION PROJECT (MRRP) AND THE CARNEGIE STATE VEHICULAR RECREATION AREA (SVRA) LONG-TERM STORM WATER FACILITIES MAINTENANCE PROJECT

CDPR is proposing to restore an altered streambed in Mitchell Ravine through 1) the removal of the berm and recontouring the stream to the pre-disturbance geometry and channel slope; 2) the realignment of the Hetch Hetchy Water and Power access road as feasible to minimize future inundation and road damage; 3) the installation of two new low water crossings within Mitchell Ravine and repair of one low water crossing at the confluence of Mitchell Ravine and Corral Hollow Creek to provide long-term access across these stream courses, and 4) the Stabilization of a historic stockpile of waste rock that was deposited when the Hetch Hetchy pipeline shaft was dug, including restoration of the adjacent stream course, as feasible. The limit of disturbance for the Mitchell Ravine Restoration Project is 18 acres. The second project involves implementing continued long-term storm water facilities maintenance measures including the maintenance of three storm water detention basins, culvert clean-out at the Sector Office Road where it crosses Corral Hollow Creek, and the repair of a low water crossing within the SVRA. The improvement measures would affect less than ½ acre of ground. Note that it is intended that the sediment basin maintenance proposed would take place both before and after the basins are rehabilitated in accordance with the project addressed in this Initial Study.

2.8.2 CORRAL HOLLOW CREEK REHABILITATION PROJECT

As part of the CHWA, Salix and Geosyntec developed a set of preliminary rehabilitation plans for two reaches of Corral Hollow Creek. The first reach consists of approximately 1650 feet of the creek adjacent to the Tesla Mine tailings piles (Tesla reach). The second reach includes 3000 feet of creek at the downstream end of Carnegie SVRA (SVRA reach). The streambed of Corral Hollow Creek within these two reaches would be excavated and realigned to return the stream to a proper functioning condition.

Currently, portions of Corral Hollow Creek are eroding the toe of a large coal tailing pile at the Tesla Mine site. The primary goal of the rehabilitation project for the Tesla reach is to prevent future water quality impacts caused by erosion and to preserve the cultural integrity of the tailing piles. The upstream portion of the stream flows through a narrow area that is tightly bound by the natural canyon slopes on the south and the tailing piles on the north. Because there is no room to relocate the stream in this area, the toe of the tailing pile would be protected with a Longitudinal Peaked Stoned Toe Protection (LPSTP) device. Downstream from the LPSTP, the stream would be relocated away from the tailing piles.

Bioengineered structures would be included throughout the reach to stabilize the stream banks and reduce erosion. The proposed rehabilitation plans for the Tesla reach are conceptually illustrated in Figures 16-1 of the CHWA.

The plans for the SVRA rehabilitation project include the reestablishment of the riparian corridor. The stream channel would be excavated to sufficient depth as determined by an analysis of the upstream and downstream reaches. Whenever feasible the “spoil” material would be used on the nearby banks to minimize expense associated with transporting. In some areas the spoil material would be placed in longitudinal deeply planted gabion type structures. The bioengineered gabion-type structures would be used on the outside of the riparian corridor for bank stabilization and to provide a physical access barrier between the stream and park activities. The access barrier would be paralleled by a vegetated buffer and peeler core fence that would separate the creek from riding, picnic areas and the campground.

Figure 1 – Regional Vicinity Map Carnegie SVRA

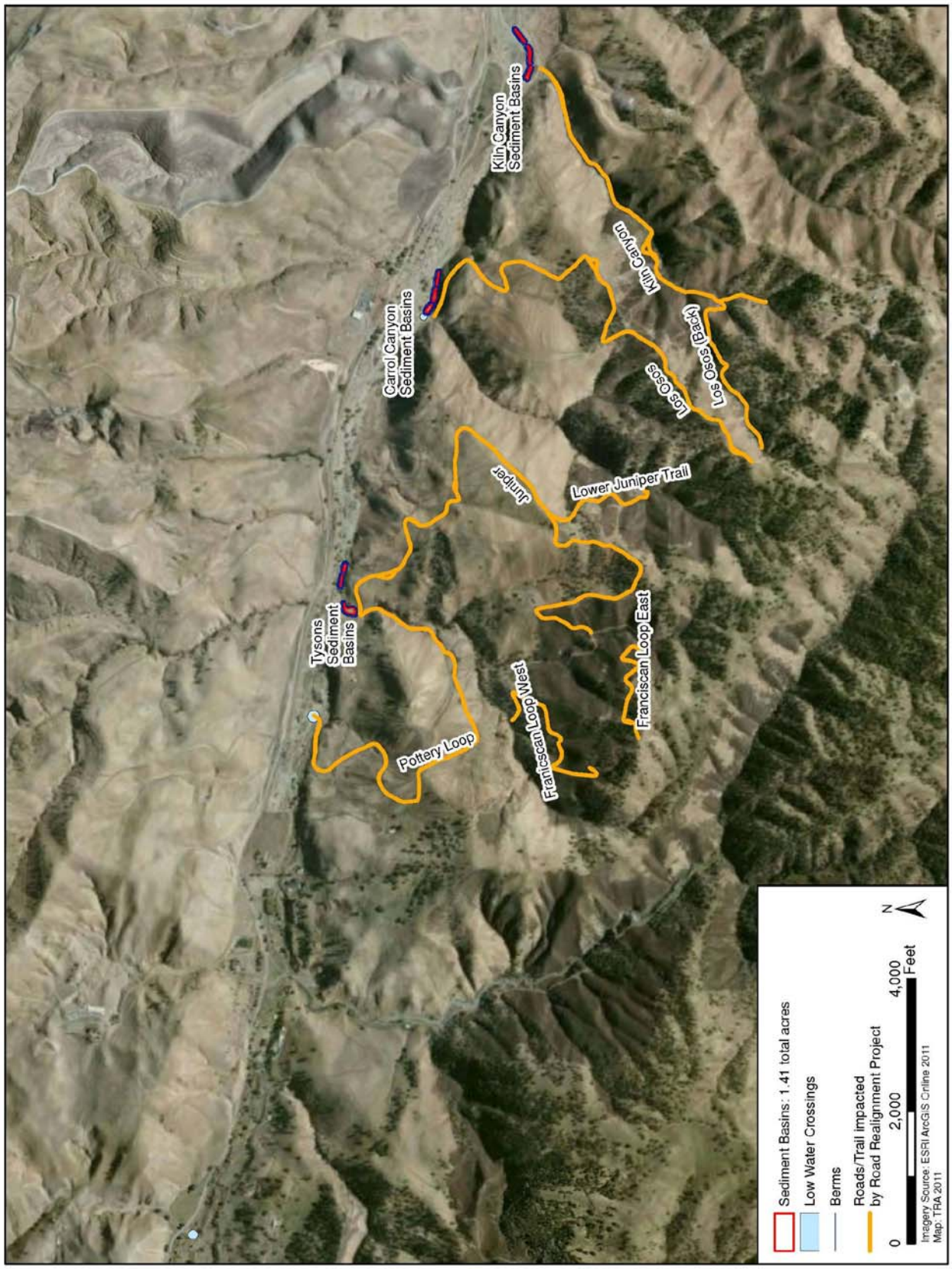


Figure 2 – Rehabilitation Priorities for Roads, Crossings, and Gullies

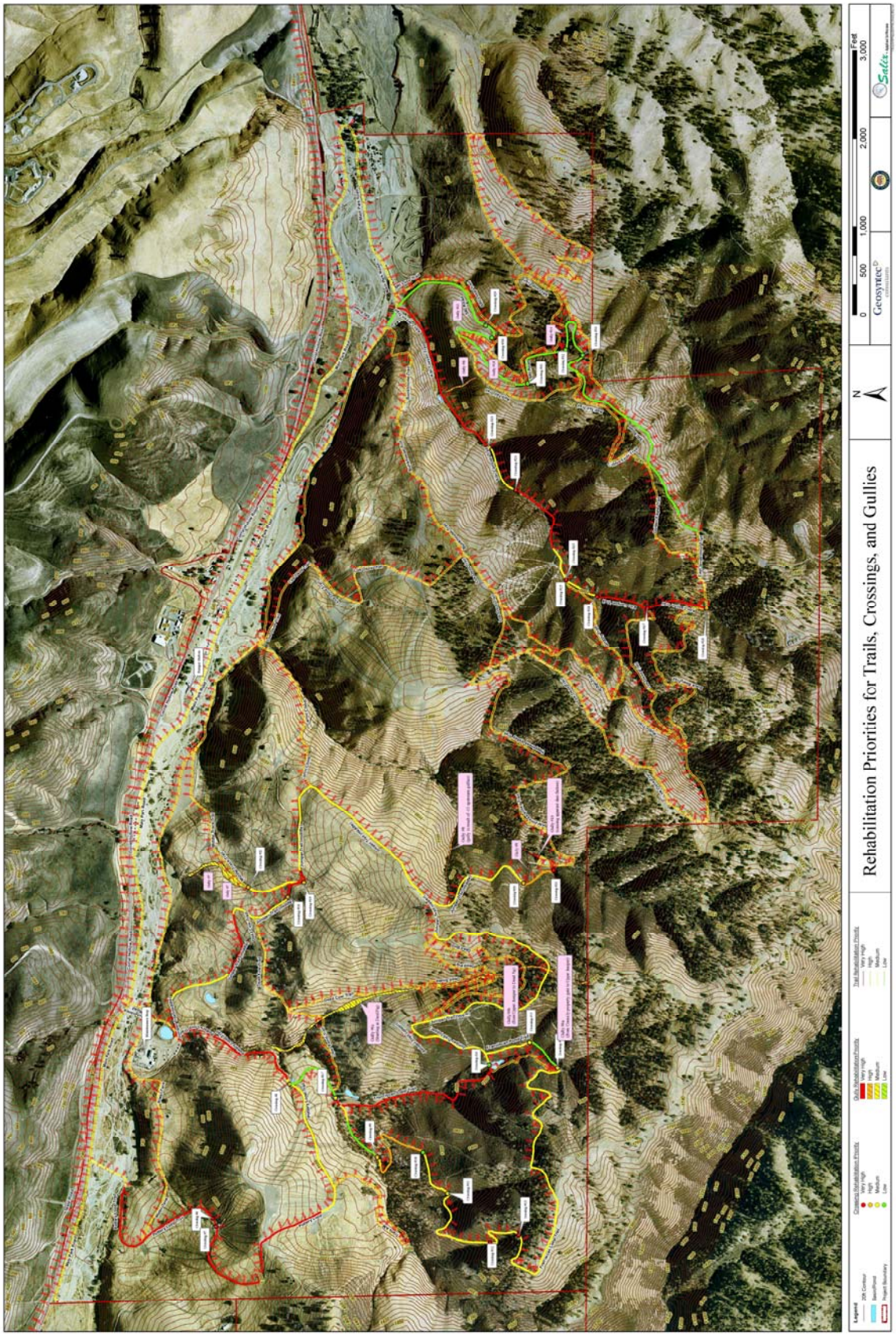


Figure 3 – Kiln Basin Layout

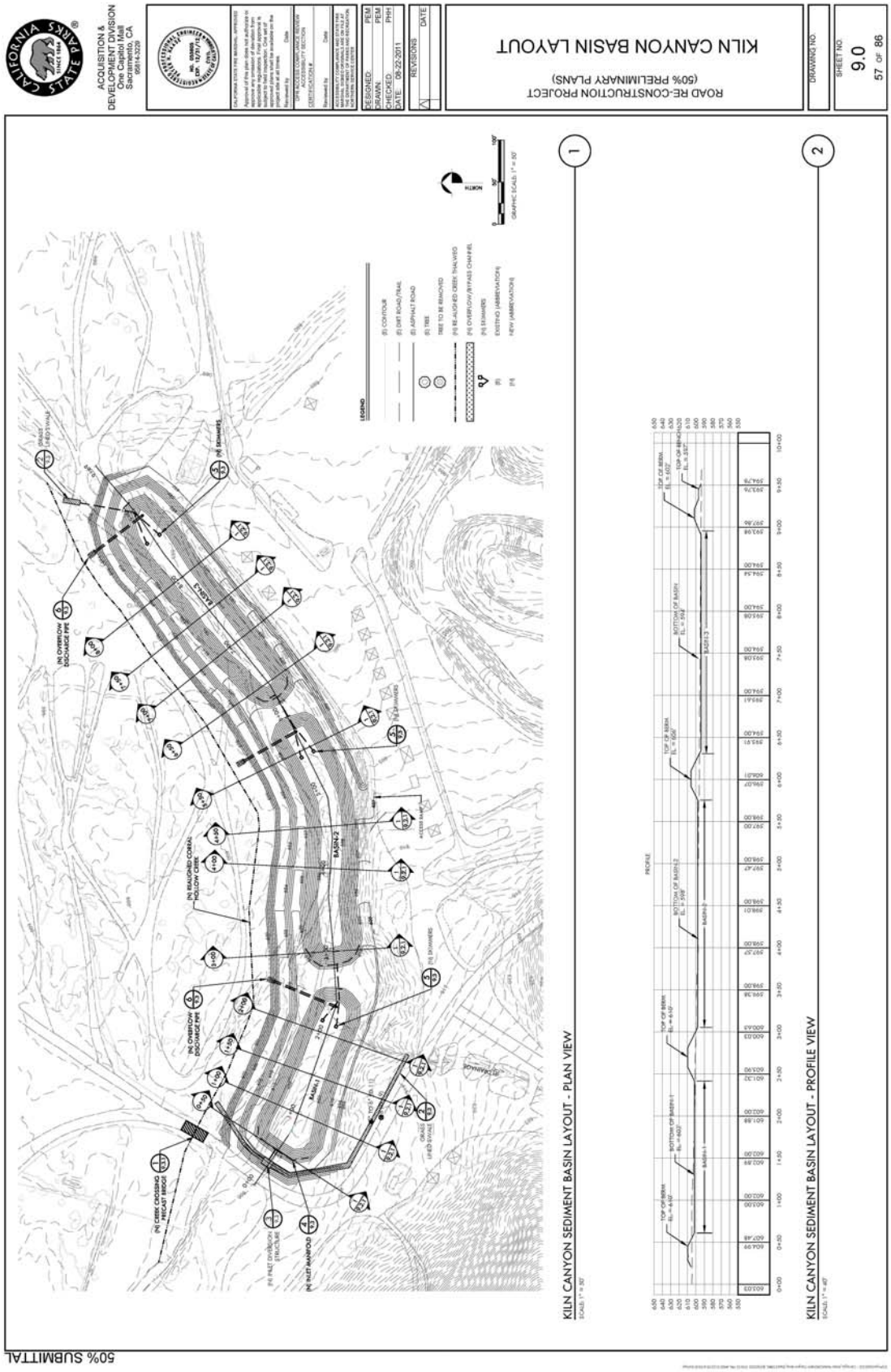


Figure 4 – Tyson Basin Layout

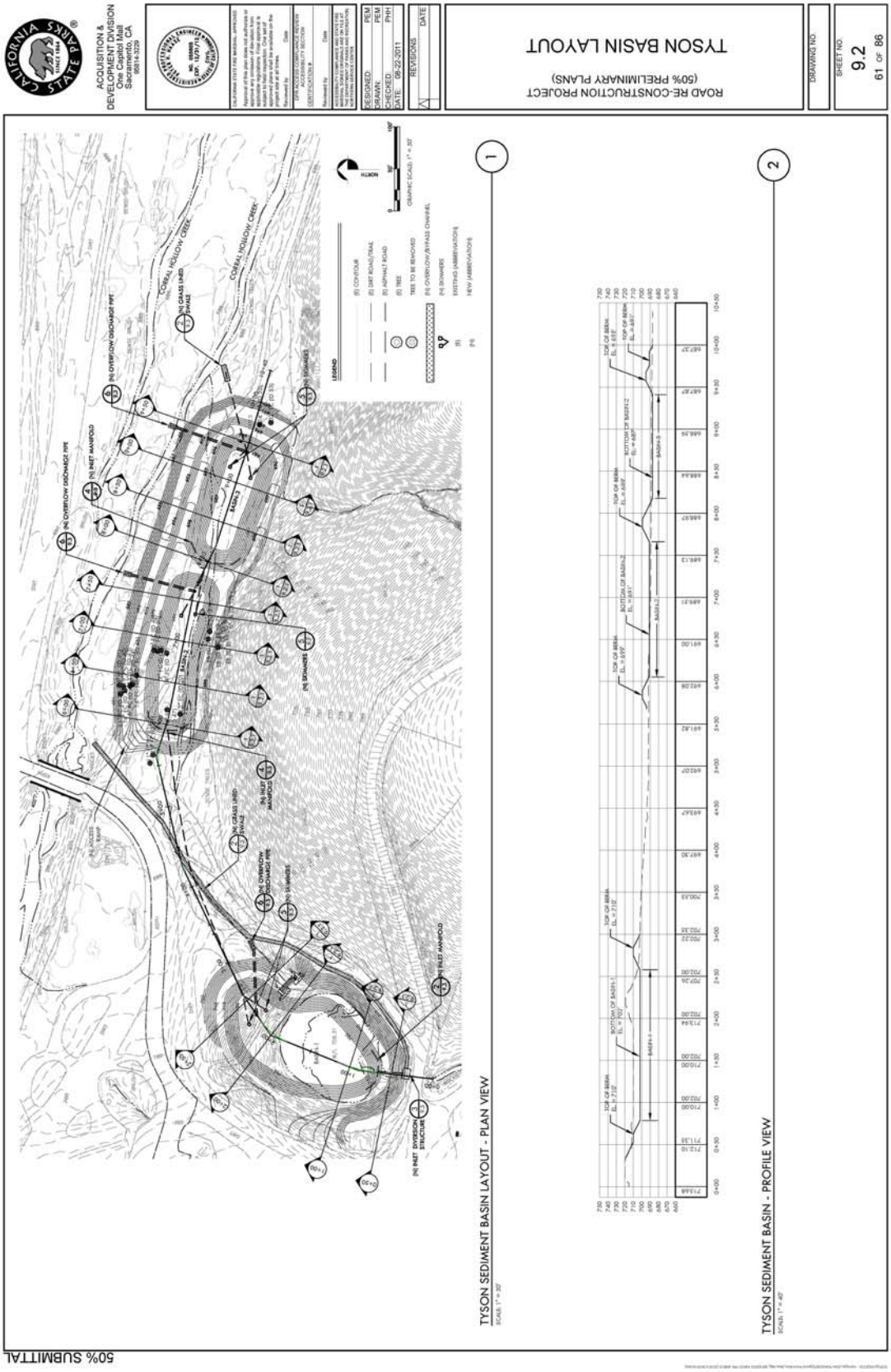


Figure 5 – Carrol Canyon Basin Layout

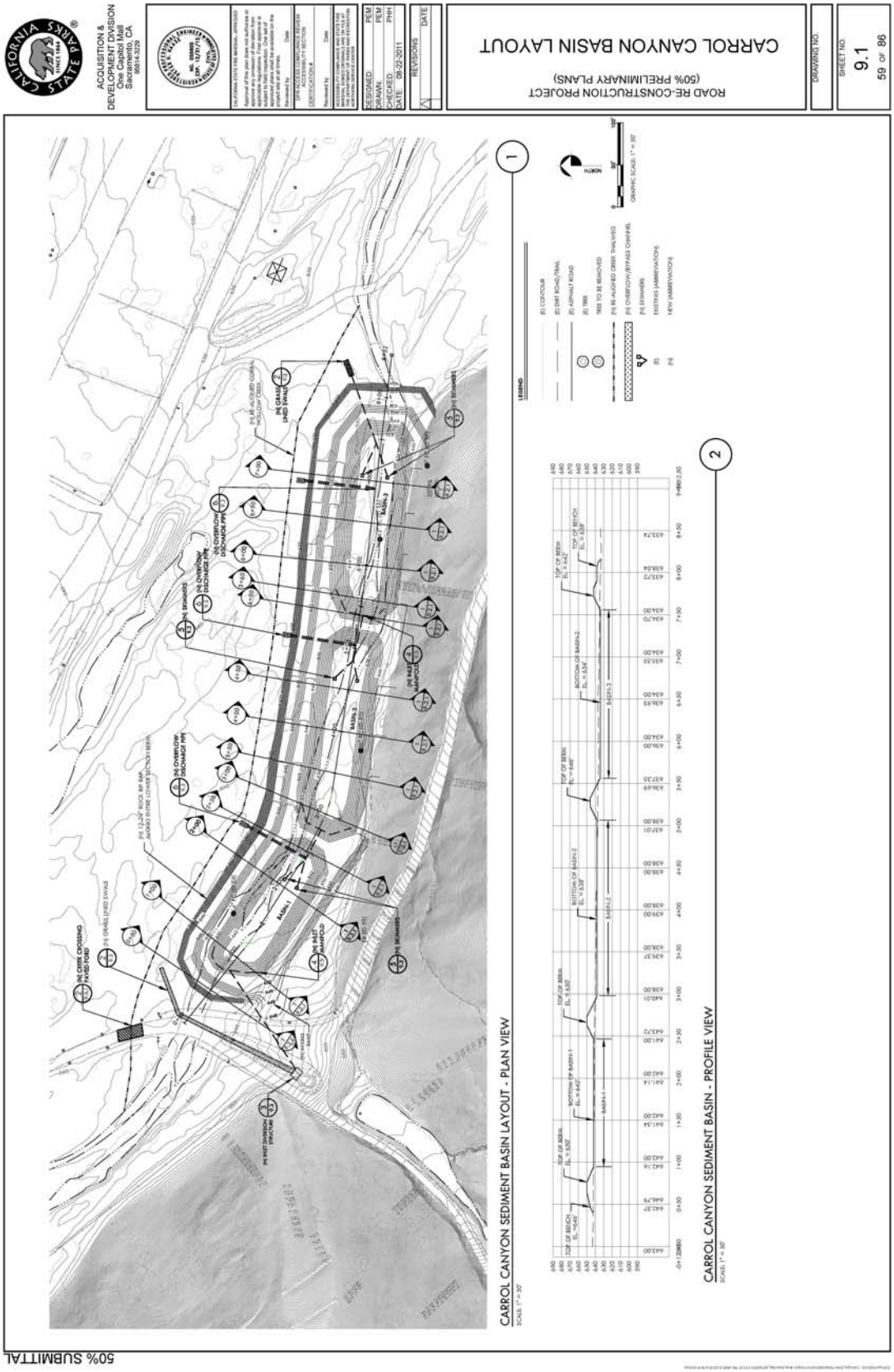


Figure 6 – Basin Details

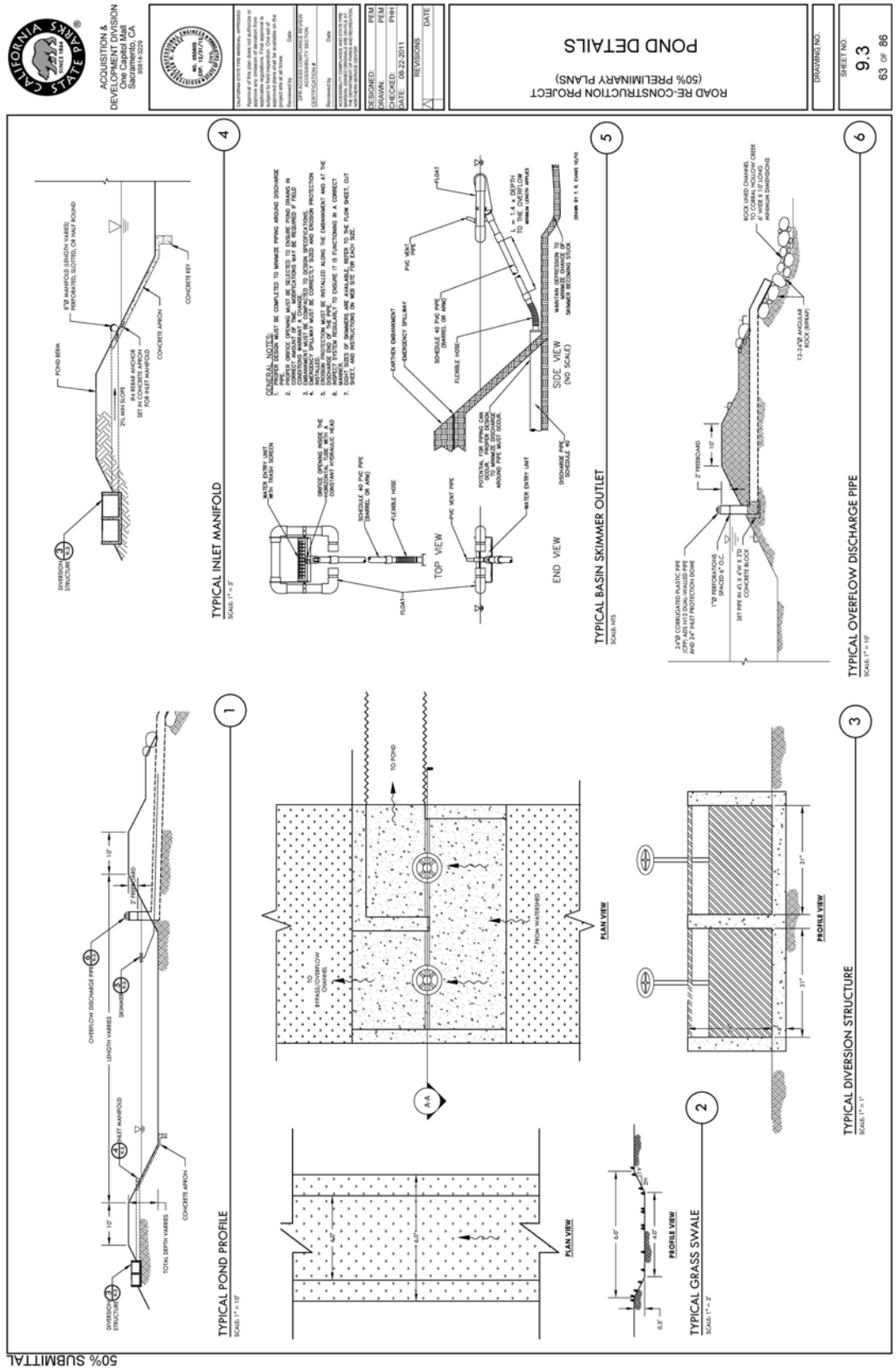


Figure 7 – Creek Crossing Details

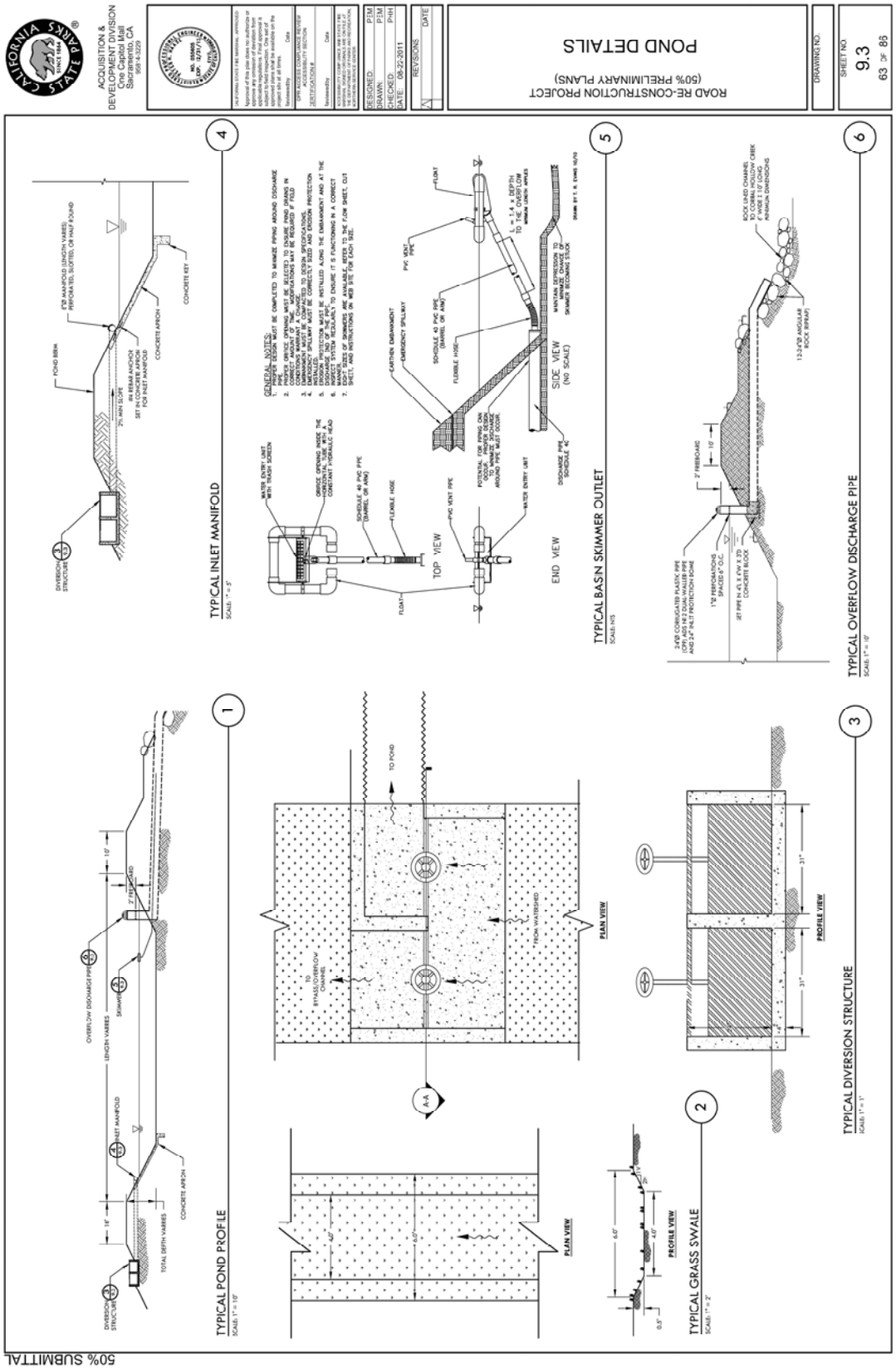
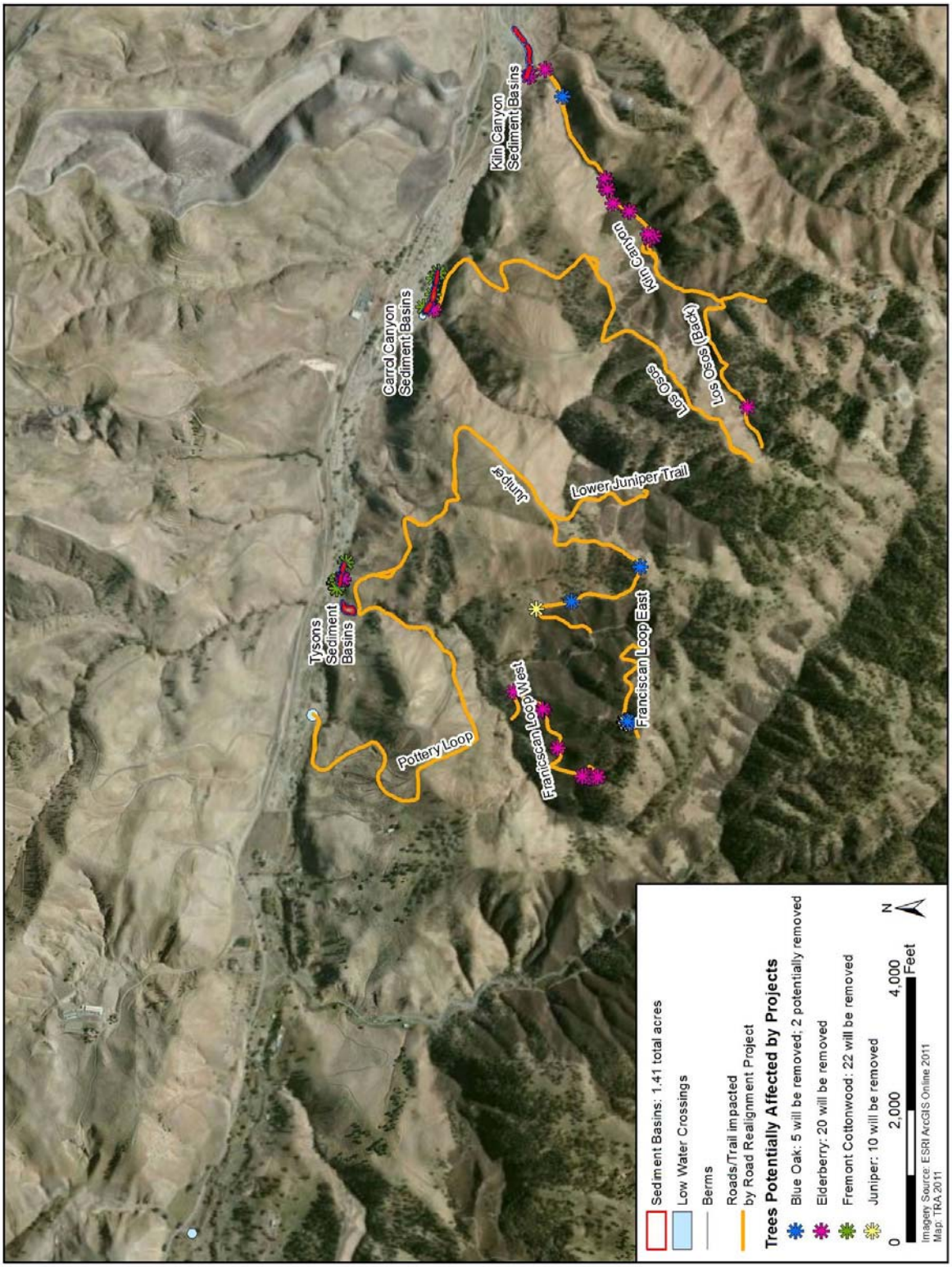


Figure 8 – Location of Elderberry Shrubs in Proximity to Project Elements



CHAPTER 3 ENVIRONMENTAL CHECKLIST AND RESPONSES

PROJECT INFORMATION

1. Project Title: Carnegie SVRA Roads and Trails and Sediment Basin Rehabilitation Projects

2. Lead Agency Name & Address: CDPR, OHMVR Division
1725 23rd Street, Suite 200
Sacramento, CA 95816

3. Contact Person & Phone Number: Jennifer Buckingham Garcia, District Services Manager, (916) 985-1096

4. Project Location: The Carnegie SVRA is located off of Corral Hollow-Tesla Road and is 15 miles east of Livermore, CA. The legal location is Township 3 South, Range 4 East, Section 31 and Township 4 South, Range 4 East, Section 6, Mount Diablo Base Meridian, on the Cedar Mountain, CA (1994) USGS topographical quadrangle. Portions of the SVRA are located in both Alameda County and San Joaquin County.

5. Project Sponsor Name & Address: same as lead agency

6. General Plan Designation: As a California State Park, the property is owned by the state and therefore general plan designations assigned by the local land use authority do not apply.

7. Zoning: As a California State Park, the property is owned by the state and therefore zoning designations assigned by the local land use authority do not apply.

8. Description of Project: CDPR is proposing to make improvements to and rehabilitate approximately 8.2 miles of roads and trails, 34 stream crossings, 16 gullies, and 4 low water crossings of Corral Hollow Creek. The work would affect 12.2 acres of land within the SVRA. This work is being done in order to reduce erosion and prevent sediment from reaching Corral Hollow Creek. In addition, the project involves making modifications to three sediment basins that already exist in the SVRA, namely Kiln, Tyson, and Carrol Canyon basins. The sediment basin modifications would disturb approximately 8.4 acres. The total area affected by the projects is approximately 20.6 acres.

9. Surrounding Land Uses & Setting: The project area is characterized by mountainous terrain and ephemeral and intermittent drainages, open water sedimentation basins and stock ponds, and several vegetation communities. Elevations range from 600 to 2200 feet above mean sea level. The SVRA contains a reach of Corral Hollow Creek, an intermittent broad alluvial stream, which drains a portion of the Inner Coast Range east of Livermore into the San Joaquin River basin of the Central Valley.

10. Approval Required from Other Public Agencies: The project site includes lands owned by the Parks Department and is under the jurisdiction of the Central Valley Regional Water Quality Control Board. Other permitting agencies include the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project involving at least one impact that is a "Potentially Significant Impact" if mitigation measures are not implemented as indicated by the checklist on the following pages. Note measures contained in this chapter can avoid or minimize all impacts to less than significant levels.

☐ Aesthetics	☐ Agricultural and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☒ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance
☐ None		

DETERMINATION:

On the basis of this initial evaluation:

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

I find that, although the original scope of the proposed project could have had a significant effect on the environment, there will not be a significant effect because revisions/mitigations to the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared. ☒

I find that the proposed project may have a significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT or its functional equivalent will be prepared. ☐

I find that the proposed project may have a "potentially significant impact" or "potentially significant unless mitigated impact" on the environment. However, at least one impact has been adequately analyzed in an earlier document, pursuant to applicable legal standards, and has been addressed by mitigation measures based on the earlier analysis, as described in the report's attachments. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the impacts not sufficiently addressed in previous documents. ☐

I find that, although the proposed project could have had a significant effect on the environment, because all potentially significant effects have been adequately analyzed in an earlier EIR or NEGATIVE DECLARATION, pursuant to applicable standards, and have been avoided or mitigated, pursuant to an earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, all impacts have been avoided or mitigated to a less-than-significant level and no further action is required. ☐

_____

Phil Jenkins, Chief, Off-Highway Motor Vehicle Recreation Division

_____

Date

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers, except "No Impact", that are adequately supported by the information sources cited. A "No Impact" answer is adequately supported if the referenced information sources show that the impact does not apply to the project being evaluated (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on general or project-specific factors (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must consider the whole of the project-related effects, both direct and indirect, including off-site, cumulative, construction, and operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether that impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate when there is sufficient evidence that a substantial or potentially substantial adverse change may occur in any of the physical conditions within the area affected by the project that cannot be mitigated below a level of significance. If there are one or more "Potentially Significant Impact" entries, an Environmental Impact Report (EIR) is required.
4. A "Mitigated Negative Declaration" (Negative Declaration: Less Than Significant with Mitigation Incorporated) applies where the incorporation of mitigation measures, prior to declaration of project approval, has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact with Mitigation." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR (including a General Plan) or Negative Declaration (CEQA Guidelines § 15063(c)(3)(D)). References to an earlier analysis should:
   a) Identify the earlier analysis and state where it is available for review.
   b) Indicate which effects from the environmental checklist were adequately analyzed in the earlier document, pursuant to applicable legal standards, and whether these effects were adequately addressed by mitigation measures included in that analysis.
   c) Describe the mitigation measures in this document that were incorporated or refined from the earlier document and indicate to what extent they address site-specific conditions for this project.
6. Lead agencies are encouraged to incorporate references to information sources for potential impacts into the checklist or appendix (e.g., general plans, zoning ordinances, biological assessments). Reference to a previously prepared or outside document should include an indication of the page or pages where the statement is substantiated.
7. A source list should be appended to this document. Sources used or individuals contacted should be listed in the source list and cited in the discussion.
8. Explanation(s) of each issue should identify:
   a) the criteria or threshold, if any, used to evaluate the significance of the impact addressed by each question **and**
   b) the mitigation measures, if any, prescribed to reduce the impact below the level of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.1 AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Environmental Setting

The project area, the Carnegie SVRA, is characterized by mountainous terrain and ephemeral and intermittent drainages, open water sedimentation basins and stock ponds, and several vegetation communities. Elevations range from 600 to 2,200 feet above mean sea level. The SVRA and the adjacent Alameda-Tesla properties contain 6 miles of Corral Hollow Creek, an intermittent broad alluvial stream, which drains a portion of the Inner Coast Range east of Livermore into the San Joaquin River basin of the Central Valley.

Discussion:

Would the project:

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

No Impact. The projects are located in San Joaquin County, California within an already established recreation area. The roads and trails repair, low water crossings, and sediment basin rehabilitation projects would be temporary projects that would not change a scenic vista.

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

No Impact. The project site does contain scenic resources such as trees, rock outcroppings, and historic buildings however, none are within view of a state scenic highway. The projects would not require the removal of any trees, rock outcroppings or historic buildings within view of a state scenic highway. The projects would be temporary projects that would not affect scenic resources or affect views from a state scenic highway.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

No Impact. The repair of the roads and trails, modification of the sediment ponds, and installation of low water crossings are meant to reduce erosion which results in unsightly erosion gullies. Repairing the gullies and preventing additional rilling and gullying at the SVRA would improve the overall scenic quality of the park.

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

No Impact. None of the projects would create a new source of substantial light or glare affecting day or nighttime views in the area as no exterior lighting or nighttime construction is proposed.

3.2 AGRICULTURE AND FOREST 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 Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4536), or timberland zoned Timberland production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion:

Would the project:

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

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

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

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

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

No Impact. (Responses a-e) The SVRA is owned by the State of California and is an existing OHV recreation area. None of the project areas are mapped as timberland. The projects would not cause the rezoning of forest or timberland. The roads and trails repair, low water crossings, and sediment basin rehabilitation projects would take place in the state designated SVRA and would not affect any agriculture or timber resources.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.3 AIR QUALITY -- Where 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:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Discussion:

Environmental Setting

The SVRA is within the Mediterranean subtropical climate zone with the majority of precipitation occurring in the winter and spring. The mean annual rainfall at Lawrence Livermore National Laboratory Site 300 (LLNL), directly north of the study area, is 10.26 inches (Salix and Geosyntec 2007). Mean annual temperature at LLNL is 61.5 degrees Fahrenheit. Average monthly lows June through August range from 63 to 70 degrees Fahrenheit and average monthly highs range from 79 to 87 degrees Fahrenheit. In December through February, average monthly lows range from 42 to 45 degrees Fahrenheit and average monthly highs range from 53 to 55 degrees Fahrenheit (Salix and Geosyntec 2007). The project area is typically windy, and the prevailing winds blow west to east. Alameda County is covered by the Bay Area Air Quality Management District (BAAQMD) which is a State non-attainment area for PM_{10} (particulate matter) and ozone. The BAAQMD is either unclassified or in attainment for all National Ambient Air Quality Standards and other State Standards.

Would the project:

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

No Impact. The projects would result in temporary emissions when the construction equipment is in use which would occur for a period of 3 to 6 months. The proposed projects would not contribute to urban growth or introduce new sources of air pollutants into the air basin. The projects would not conflict with or obstruct implementation of any applicable air quality management plans due to the small size, short duration, and temporary nature of the project elements.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

No Impact. The projects would result in temporary emissions for the duration of the work that involves use of construction equipment. However, the projects do not involve new land uses and would not contribute to urban growth or introduce new permanent sources of air emissions into the air basin.

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

No Impact. The projects do not involve new land uses and would not contribute to urban growth or introduce new sources of air emissions into the air basin. Exhaust from construction vehicles and grading equipment would result in temporary air pollutant emissions at the SVRA. The temporary nature of the impacts does not result in a cumulatively considerable net increase in PM_{10} or ozone precursors.

d) Expose sensitive receptors to substantial pollutant concentrations?

No Impact. The closest sensitive receptors to the project area are a few residences along Tesla Road. There are no other sensitive receptors within one-quarter mile of the project sites. Only temporary emissions from construction equipment and dust would occur during the project implementation period, and none of the sensitive receptors will be subjected to substantial concentrations of air pollutants. The road repair and sediment basin rehabilitation work would be limited to a 3-6 month period and will not result in substantial concentrations of air pollutants. Off-highway vehicle riders in the SVRA are not sensitive receptors because they are not expected to remain stationary in the work areas.

e) Create objectionable odors affecting a substantial number of people?

No Impact. The activities associated with the projects are temporary, remote, and do not involve materials or activities that are a potential source of significant odors. They would not result in the creation of objectionable odors affecting a substantial number of people.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.4 BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Environmental Setting

Regulatory Setting

In addition to CEQA, other federal and state laws apply to the biological resources identified in this report. Each of these laws is identified and discussed below.

Federal Endangered Species Act (FESA)

The federal Endangered Species Act (ESA) of 1973 (16 USC §§ 1531 et seq.) protects fish and wildlife species that are listed as threatened or endangered, and their habitats. “Endangered” refers to species, subspecies, or distinct population segments that are in danger of extinction in all or a significant portion of their range. “Threatened” refers to species, subspecies, or distinct population segments that are considered likely to become endangered in the future.

The ESA prohibits “take” of any fish or wildlife species listed under the ESA as endangered or threatened. “Take” is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting a federally endangered or threatened species, or attempting to engage in such conduct. Take may also include habitat modification that actually kills or injures listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. The ESA also prohibits removing, digging up, cutting, or maliciously damaging or destroying federally listed plants on federal land.

There are two processes whereby take is allowed when it is incidental to an otherwise legal activity. Section 7 of the ESA requires federal agencies, in consultation with and with the assistance of, the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modifications of critical habitat for these species. Section 10 of the ESA provides a means whereby a nonfederal action with a potential to result in the take of a listed species could be allowed under an incidental take permit. An incidental take permit is required when non-federal activities would potentially result in the take of a threatened or endangered species.

Under the ESA, the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered. The ESA is enforced by the US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). Pursuant to the requirements of ESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species could be present and determine whether the proposed project would have a potentially significant impact on such species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species that is proposed for listing under ESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]).

When the federal government lists a species as endangered or threatened, it also must identify that species' critical habitat. When an area is designated as critical habitat, it means that any federal agency with a project in that area must consult with the USFWS. It does not mean that any project in critical habitat must obtain a permit from the USFWS. Critical habitat includes those areas that are important for the species' survival or recovery and that need special management. While a designated critical habitat area is not intended to include the entire potentially occupied habitat of the species, it can include habitat that is not currently occupied by the species. The agency is required to use the best available scientific information in making

a decision about critical habitat. Only about 12 percent of listed species have a designated critical habitat area.

Four federally-listed species could be affected by the projects: California tiger salamander, valley elderberry longhorn beetle, Alameda whipsnake, and California red-legged frog. Of the species analyzed, only the Alameda whipsnake and the California red-legged frog' designated critical habitat encompasses the project areas.

The Migratory Bird Treaty Act of 1918 (MBTA)

The federal Migratory Bird Treaty Act (MBTA) (16 USC §§ 703 et seq.) enacted the provisions of treaties between the United States, United Kingdom, Mexico, Japan, and the Soviet Union, and authorizes the U.S. Secretary of the Interior to protect and regulate take of migratory birds. The MBTA is administered by the USFWS. It establishes seasons and bag limits for hunted species, and renders taking, possession, import, export, transport, sale, purchase, and barter of migratory birds, their occupied nests, and their eggs illegal except when authorized by a federal permit.

More than 800 species of birds are protected under the MBTA. Specific definitions of migratory bird are addressed in the international treaties. In general, birds that migrate to complete different stages of their life history or to take advantage of different habitat opportunities during different seasons are "migratory birds" subject to the MBTA.

The Clean Water Act of 1972 (Section 404)

The United States does not have a federal, comprehensive law protecting wetlands. However, through the regulation of activities in "waters of the United States," the Clean Water Act is the main federal law used to protect wetlands. Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into "waters of the United States," which includes traditional navigable waters, interstate waters, certain tributaries of any of these waters, and wetlands that meet these criteria or that are adjacent to any of these waters. In 1987, the USACE published a manual for the delineation of wetlands that are regulated by Section 404 and generally defined wetlands as requiring the following three characteristics: hydrology, hydric soils, and hydrophytes (plants adapted to living in saturated soils).

U. S. Army Corps of Engineers Rivers and Harbors Act

The USACE also regulates activities in waters of the United States under the federal Rivers and Harbors Act. Section 10 of the Rivers and Harbors Act requires permits for any work or structures in navigable waters of the United States, including wetlands within or adjacent to these waters. Both dredging and filling are regulated activities under the Act. Navigable waters are defined as those waters that are subject to the ebb and flow of the tide, or that are presently have been, or may be used for transport of interstate or foreign commerce.

USFWS Wetland Definition

In 1979 the USFWS adopted the wetland classification developed by Cowardin et al. In this classification system, wetlands are defined as lands that are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water, and that have one or more of the following attributes:

At least periodically, the land supports predominantly hydrophytes; the substrate is predominantly undrained hydric soil; and, the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.
This differs slightly from the USACE definition. The USACE definition requires all three wetlands attributes (hydrology, hydrophytes, and hydric soils) to be present, where the USFWS definition does not.

California Endangered Species Act (CESA)

The California Endangered Species Act (CESA) protects wildlife and plants listed as “threatened” or “endangered” by the California Fish and Game Commission, as well as species identified as candidates for listing. The California Department of Fish and Game (CDFG) administers the CESA. The CESA restricts all persons from taking listed species except under certain circumstances. The state definition of take is similar to the federal definition, except that the CESA does not prohibit indirect harm to listed species by way of habitat modification. Under the CESA, an action must have a direct, demonstrable detrimental effect on individuals of the species. Under Sections 2080 and 2081 of the California Fish and Game Code, the CDFG may authorize take of listed species, except for species that are designated as fully protected. Fully protected species may not be taken except for scientific research. Various Fish and Game Code sections identify fully protected species.

Various species are also referred to as “California species of special concern.” A California species of concern is similar to a federal species of concern and is not subject to the take prohibitions of the CESA. Under the CESA, CDFG is responsible for maintaining a list of threatened species and endangered species (California Fish and Game Code Section 2070). CDFG also maintains lists of species of special concern (CSSC) that serve as "watch lists." SSC are species that are declining at a rate that could result in listing under the ESA or CESA, and/or have historically occurred in low numbers, and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals and is intended to focus attention on the species to help avert the need for costly listing under federal and state endangered species laws. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them (CDFG, 2003).

Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species could be significantly impacted by the project. In addition, the CDFG encourages informal consultation on any proposed project that could impact a candidate species or a species of special concern. California listed endangered and threatened species that could be present in the project areas include California tiger salamander and Alameda whipsnake. California species of special concern that could be present in the project area include silvery legless lizard, pallid bat, Townsend’s big-eared bat, loggerhead shrike, San Joaquin whipsnake, coast horned lizard, California red-legged frog, foothill yellow-legged frog, and American badger.

Fish and Game Code Section 1602

Section 1602 requires an entity to notify CDFG of any proposed activity that may substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing pavement where it may pass into any stream, river, or lake. CDFG uses the USFWS definition of wetlands when regulating these activities. Although 1602 permits are

generally not applicable to federal projects on federal land, its provisions can provide a reference for determining the significance of impacts.

Fish and Game Code Section 3503 and 3503.5

A variety of species are protected under the California Fish and Game Code, separate from the protection afforded under the CESA. For example, birds that do not qualify as game birds, migratory game birds, or fully protected birds may be protected under Sections 3503, 3503.5 and 3800 of the California Fish and Game Code.

Section 3503 simply states, “it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.” The exceptions generally apply to species that are causing economic hardship to an industry. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted.”

Certain species are also fully protected. This classification was the state's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research or for habitat restoration that will promote their survival. Golden eagle is a fully protected species that could be active in the project areas.

California Native Plant Society Ranking

The California Native Plant Society (CNPS) has a rating system for the state’s rare, threatened and endangered plants. Plants rated by CNPS are subject to protection under CEQA, and may also be protected by state and federal endangered species laws if they are listed by these governments.

Six special-status plant species have potential to occur due to the presence of moderately suitable habitat and soils: Santa Clara thorn-mint (Acanthomintha lancolata), big tarplant (Blepharizonia plumose), round-leaved filaree (Erodium macrophylla), Hospital Canyon larkspur (Delphinium californicum ssp. interius), stinkbells (Fritillaria agrestis), and chaparral ragwort (Senecio aphanactis).

Bats

Some animal species that are otherwise not protected by the ESA or CESA and do not have a special CDFG or Fish and Game Code designation (e.g., fully protected) may still, under CEQA, be determined to be significantly impacted by a project. Considered nongame mammals, bats are protected by CDFG Code 4150 which reads, “[a]ll mammals occurring naturally in California which are not game mammals, fully protected mammals, or fur-bearing mammals, are nongame mammals. Nongame mammals or parts thereof may not be taken or possessed except as provided in this code or in accordance with regulations adopted by the commission.”

Bats are widely distributed throughout California in a variety of habitats from man-made structures such as mines, bridges and buildings to natural habitats such as caves, rock

outcrops, and trees. Tree-roosting bats will roost in tree snags or live trees supporting cavities, crevices, or loose bark. Some species of bats will temporarily roost in trees at night in-between bouts of foraging in the evening, and eventually return to a more protected day roost where they will settle during the day. However, some bat species will use trees for both day and night roosting habitats. Bat species that have the potential for using the site are the big brown bat (Eptesicus fuscus), Brazilian free-tailed (Tadarida brasiliensis), and Yuma myotis (Myotis yumanensis).

Habitat Types, Wildlife, and Special-Status Species

The vegetation communities, wildlife and special-status species present within the SVRA are presented below. There are several habitat types within the study area, but the dominant vegetation communities are California annual grassland, blue oak savanna, Diablan sage scrub, and riparian scrub.

A. Vegetation Communities

California Annual Grassland

California non-native and native annual grassland occurs throughout the SVRA. Dominant species include non-native brome grass (*Bromus* spp.), ryegrass (*Lolium* spp.), and oat grass (*Avena* spp.) and wildflowers such as California poppy (*Eschscholzia californica*), goldfields (*Lasthenia* spp.), lupines (*Lupinus* spp.), and brodaiea (*Triteleia, Brodaiea* spp.). Native grasses include needlegrass (*Nassella* spp.), and wildrye (*Leymus* spp) among others.

Blue Oak Savannah and Woodland

Coast live oak habitats are categorized based on the density of the tree canopy. Oak habitats with canopy densities of 50% or less are categorized as oak savannah while habitats with densities greater than 50% are categorized as oak woodland. Blue oak woodland and savannah thrive in relatively deep, well-draining soils. Blue oak savannah forms a mosaic with habitats of California annual grassland and Diablan sage scrub and is found throughout the project areas. The blue oak (*Quercus douglasii*) is the dominant species. California buckeye (*Aesculus californica*) is scattered throughout this habitat.

Diablo Sage Scrub

The dominant scrub community at the SVRA is Diablan sage scrub. This community is dominated by black sage (*Salvia mellifera*) and California sage (*Artemisia california*), and includes sticky moneyflower (*Mimulus aurantiacus*), coyote brush (*Baccharis pilularis*), California yerba santa (*Eriodictyon californicum*), toyon (*Heteromeles arbutifolia*), and bluewitch (*Solanum umbelliferum*).

Valley Foothill Riparian Scrub

Valley foothill riparian scrub is restricted to alluvial deposits consisting of cobbles and gravels with little organic matter. Vegetation consists of widely scattered shrubs, sparse herb cover, and bare ground. The characteristic species of the riparian scrub habitat are California sagebrush and mule fat (*Baccharis salicifolius*). Other shrub species include sticky monkeyflower, blue witch, and tree tobacco (*Nicotiana glauca*). Herb cover can be found in areas that are more stable and less prone to flooding. Non-native grasses and herbs that are present in the riparian scrub include ripgut grass (*Bromus diandrus*), slender wild oat (*Avena fatua*), soft chess

(*Bromus hordeaceus*), common fiddleneck (*Amsinckia menziesii var. intermedia*), black mustard (*Brassica nigra*), and yarrow (*Achillea millefolium*).

Desert Olive Scrub

Desert olive scrub, a riparian habitat with dense stands, is found on the sheltered areas of canyon bottoms and associated lower slopes. It is almost a pure stand of desert olive (*Forestiera pubescens*).

Vegetation of the Sediment Basin Project Areas

Kiln Basin is a tenth of an acre open water basin that does not currently contain wetland vegetation.

Tyson's Basin is a quarter acre sedimentation basin that provides palustrine open water habitat. Overflow water from this basin drains to Corral Hollow Creek.

Carrol Basin is a tenth of an acre in size, about 12 feet deep at the downstream end, and 2 feet deep at the upstream end. This is an open water basin that does not contain wetland vegetation.

B. Wildlife

All habitats found at the SVRA provide food, water, migration and dispersal corridors, and escape, nesting, and thermal cover for an abundance of wildlife. Wildlife typically seen in the area include black-tailed deer (*Odocoileus hemionus columbianus*), desert cottontail (*Sylvilagus auduboni*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), glossy snake (*Arizona elegans*), and striped skunk (*Mephitis mephitis*).

Small rodents attract raptors that hunt at night such as short-eared owl (*Asio flammeus*), as well as day-hunting raptors such as red-tailed hawk (*Buteo jamaicensis*). The trees and shrubs on site provide suitable nesting habitat for a variety of birds, including raptors such as red-tailed hawk, Cooper's hawk (*Accipiter cooperi*) and passerines such as California towhee (*Pipilo crissalis*), oak titmouse (*Baeolophus inornatus*), and Bewick's wren (*Thryomanes bewickii*), among others. Other raptors that may use the SVRA for foraging include northern harrier (*Circus cyaneus*), red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius*), and golden eagles (Aquila chrysaetos).

C. Wildlife Movement Corridors

Wildlife movement includes migration (*i.e*., usually one way per season), inter-population movement (*i.e*., long-term genetic flow) and small travel pathways (*i.e.,* daily movement corridors within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities, such as foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow among populations. These linkages among habitats can extend for miles and occur on a large scale throughout California. Habitat linkages facilitate movement between populations located in discrete areas and populations located within larger habitat areas.

The CDPR properties are part of an extensive open space area, most of which is privately held and used for ranching. Wildlife movement undoubtedly occurs across the CDPR properties, but

the properties do not contain an important or restricted movement corridor for wildlife. Extensive open space lies in all directions of the SVRA and is available to wildlife travelling through the region.

D. Special-Status Species

Special-status species are those plants and animals that are legally protected or otherwise recognized as vulnerable to habitat loss or population decline by federal, state, or local resource conservation agencies and organizations. In this analysis, special-status species includes:

- species that are state and/or federally listed threatened or endangered (USFWS 2010b and c; CDFG 2010);
- species considered as candidates for listing as threatened or endangered (USFWS 2010b and c; CDFG 2010);
- CDFG species of special concern (CDFG 2010);
- fully protected species per California Fish and Game Code; and,
- plants considered by the California Native Plant Society (CNPS) to be rare, threatened, or endangered (CNPS 2010; serves as CDFG's list of candidate species).

Special-status species that were considered for the potential to occur in the project areas are listed in Table 5. This list was compiled from a review of the CNDDB, CNPS's Rare Plant Inventory, other relevant publications, consultation with the CDPR environmental scientist (C. Elsholz, pers. comm.), and the preparers' knowledge of the area and local species.

Table 5. Special-status Plant and Animal Species and the Potential to Occur in the Project Areas

Species that are considered to have either a moderate or high potential for occurring onsite are discussed in more detail following the table.

Species Name	**Status***	**Habitat**	**Potential to occur on or near the project sites**
WILDLIFE			
Tri-colored blackbird (*Agelaius tricolor*)	Nesting colony: CSSC, BCC	Freshwater marshes and swamps; wetlands	Low; preferred habitat not on site.
Western pond turtle (*Actinemys marmorata*)	CSSC	Freshwater ponds and creeks in woodlands and grasslands	High, found at Kiln Basin
California tiger salamander *(Ambystoma californiense)*	FT, SE	Seasonal wetlands in grassland and oak-savannah	High; this species has been observed in Ravine Corral basin adjacent to Mitchell Ravine.
Silvery legless lizard (*Anniella pulchra pulchra*)	CSSC	Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	Moderate; while not discovered on CDPR properties, this species has been observed less than 5 miles away.
Pallid bat *(Antrozous pallidus)*	CSSC	Occurs in oak woodland habitat in central and northern California, among	Moderate; while not discovered on

Species Name	Status*	Habitat	Potential to occur on or near the project sites
		other habitat types. Day roost sites include rock outcrops, mines, caves, tree hollows, buildings, and bridges. Night roost sites are commonly under bridges, but also in caves and mines.	CDPR properties, this species has been observed less than 5 miles away.
Golden eagle (*Aquila chrysaetos*)	SFP, BCC	Found in broadleaved upland forest, cismontane woodland, coastal prairie, Great Basin grassland, Great Basin scrub, lower montane coniferous forest, pinyon - juniper woodlands, upper montane coniferous forest, and valley and foothill grassland	High; this species has been observed on CDPR properties.
Burrowing owl (*Athene cunicularia*)	CSSC, BCC	Lives in dry, open areas with no trees and short grass. Found in coastal prairie, coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, and Valley and foothill grassland.	Low; not known to occur on CDPR properties, but this species has been observed less than 5 miles away.
Longhorn fairy shrimp (*Branchinecta longiantenna*)	FE	Found in valley and foothill grasslands, vernal pools, and wetlands.	None; preferred habitat not on site.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Found in valley and foothill grasslands, vernal pools, and wetlands.	None; preferred habitat not on site.
Ferruginous hawk (*Buteo regalis*)	WL, BCC	Found in open country such as Great Basin grassland, Great Basin scrub, pinyon - juniper woodlands, and valley and foothill grassland.	Moderate; while not discovered on CDPR properties, this species has been observed less than 5 miles away.
Townsend's big-eared bat (*Corynorhinus townsendii*)	CSSC	Townsend's big-eared bat can be found in mines, caves and structures in broadleaved upland forest, chaparral, chenopod scrub, Great Basin grassland and scrub, Joshua tree woodland, lower montane coniferous forest, meadow and seeps, Mojavean desert scrub, riparian forest, riparian woodland, Sonoran desert scrub, Sonoran thorn woodland, upper montane coniferous forest, and valley and foothill grassland.	High; this species has been observed CDPR properties.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Associated with elderberry trees (*Sambucus* spp.) in riparian forests during its entire lifecycle.	Moderate; while not discovered on CDPR properties, this species has been observed less than 5 miles away and elderberry shrubs are found in the project area.
California horned lark (*Eremophila alpestris*	WL	Open habitats preferring areas with sparse vegetation and exposed soils.	Low; this species has been observed

Species Name	Status*	Habitat	Potential to occur on or near the project sites
actia)		Breeds March to July in open, flat grasslands, agricultural fields, and rangelands.	on CDPR properties.
Western mastiff bat (*Eumops perotis californicus*)	CSSC	Occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. Primarily roosts in crevices in vertical cliffs, usually granite or consolidated sandstone, and in broken terrain with exposed rock faces.	Low; not discovered on CDPR properties, but has been observed less than 5 miles away.
Prairie falcon (*Falco mexicanus*)	WL, BCC	Found in Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, and valley and foothill grassland. Suitable breeding habitat usually requires cliffs for nests.	High; this species has been observed on CDPR properties.
Loggerhead shrike (*Lanius ludovicianus*)	CSSC, BCC	Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting in broken broadleaved upland forests, savannah, pinyon-juniper woodlands, riparian woodlands, and desert scrub and washes.	High; this species has been observed on CDPR properties.
San Joaquin whipsnake (*Masticophis flagellum ruddocki*)	CSSC	Occurs in open, dry, treeless areas, including valley and foothill grassland and chenopod scrub. Takes refuge in rodent burrows, under shaded vegetation, and under surface objects.	High; this species has been observed on CDPR properties.
Alameda whipsnake (*Masticophis lateralis euryxanthus*)	FT, ST	Open areas in canyons, rocky hillsides, chaparral scrublands, open woodlands, pond edges, stream courses.	Moderate; while not discovered on CDPR properties, suitable habitat exists at surrounding grassy hillsides and oak savannahs.
Coast horned lizard (*Phrynosoma blainvillii*)	CSSC	Inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil.	High; this species was observed in the SVRA property in the spring of 2010.
Foothill yellow-legged frog (*Rana boylii*)	CSSC	Occurs in rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands.	Moderate, species has been reported within the SVRA in the past. Habitat within project areas not preferred by this species.
California red-legged frog *(Rana aurora draytonii)*	FT, CSSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	High; has been observed in the project area as recently as June 2010.

Species Name	Status*	Habitat	Potential to occur on or near the project sites
Western spadefoot (*Spea hammondii*)	CSSC	Prefers open areas with sandy or gravelly soils, in mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats. Rainpools which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	High; has been observed in the project area as recently as March 2010.
American badger *(Taxidea taxus)*	CSSC	Abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils	Moderate; this species has been observed on CDPR properties.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, ST	Typically occurs in annual grassland or mixed shrub/grassland habitats throughout low, rolling hills and in the valleys. Dens are usually located on loose-textured soils on slopes less than 40 degrees. Natal dens tend to be found on slopes of less than six degrees.	Low; not observed on CDPR properties.
PLANTS			
Santa Clara thorn-mint (*Acanthomintha lanceolata*)	CNPS 4.2	Found in chaparral, cismontane woodland, and coastal scrub. Blooms March-June.	Low; historically known presence on CDPR properties; however, recent surveys did not find this species.
Sharsmith's onion (*Allium sharsmithiae*)	CNPS 1B.3	Known only from the Mt. Hamilton Range. Found in chaparral and cismontane woodland on serpentine soils. Blooms March-May.	Low; has not been found in CDPR rare plant surveys. Serpentine soils not found on site.
Large-flowered fiddleneck (*Amsinckia grandiflora*)	FE, SE, CNPS 1B.1	Found in cismontane woodland and valley and foothill grassland. Blooms April-May.	Low; has not been found in CDPR rare plant surveys.
Bent-flowered fiddleneck *(Amsinckia lunaris)*	CNPS 1B.2	Found in coastal bluff scrub, cismontane woodland, and valley and foothill grassland. Blooms March-June.	Low; has not been found in CDPR rare plant surveys.
Alkali milk-vetch (*Astragalus tener var. tener*)	CNPS 1B.2	Found in alkali playas, valley and foothill grassland, vernal pools, and wetlands. Blooms March-June.	Low; has not been found in CDPR rare plant surveys.
Heartscale (*Atriplex cordulata*)	CNPS 1B.2	Found in chenopod scrub, meadows and seeps, and valley and foothill grassland. Blooms April-October.	Low; has not been found in CDPR rare plant surveys.
Bitterscale (*Atriplex depressa*)	CNPS 1B.2	Found in alkali playas, chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools, and wetland. Blooms April-October.	Low; has not been found in CDPR rare plant surveys.
San Joaquin spearscale (*Atriplex joaquiniana*)	CNPS 1B.2	Found in chenopod scrub, meadows and seeps, and valley and foothill grassland. Blooms April-October.	Low; has not been found in CDPR rare plant surveys.

Species Name	Status*	Habitat	Potential to occur on or near the project sites
Big-scale balsamroot (*Balsamorhiza macrolepis var. macrolepis*)	CNPS 1B.2	Found in chaparral, cismontane woodland, and valley and foothill grassland (sometimes on serpentine soil). Blooms March-June.	Low; has not been found in CDPR rare plant surveys.
Big tarplant (*Blepharizonia plumose*)	CNPS 1B.1	Found in valley and foothill grassland. Blooms July-October.	Moderate; known presence on CDPR properties.
Round-leaved filaree (*Erodium macrophylla*)	CNPS 1B.1	Found in cismontane woodland and valley and foothill grassland. Blooms March-May.	Moderate; known presence on CDPR properties.
Chaparral harebell (*Campanula exigua*)	CNPS 1B.2	Usually found in chaparral on serpentine soil. Blooms May-June.	Low; preferred habitat and serpentine soils not found on site.
Lemmon's jewelflower (*Caulanthus coulteri var. lemmonii*)	CNPS 1B.2	Found in pinyon - juniper woodlands and valley and foothill grassland. Blooms March-May.	Low; has not been found in CDPR rare plant surveys.
Congdon's tarplant *(Centromadia parryi ssp. congdonii)*	CNPS 1B.2	Found in valley & foothill grassland on alkaline soils. Blooms May-October.	Low; has not been found in CDPR rare plant surveys.
Mt. Hamilton fountain thistle (*Cirsium fontinale var. campylon*)	CNPS 1B.2	Found in chaparral, cismontane woodland, and valley and foothill grassland on serpentine seeps. Blooms April-October.	Low; has not been found in CDPR rare plant surveys. Serpentine soils not found on site.
Santa Clara red ribbons (*Clarkia concinna ssp. automixa*)	CNPS 4.3	Found in chaparral and cismontane woodland. Blooms May-June.	Low; has not been found in CDPR rare plant surveys.
Hispid bird's-beak (*Cordylanthus mollis ssp. hispidus*)	CNPS 1B.1	Found in alkali playas, meadows and seeps, and wetlands. Blooms June-September.	Low; has not been found in CDPR rare plant surveys. Preferred habitat not on site.
Palmate-bracted bird's-beak (*Cordylanthus palmatus*)	FE, SE, CNPS 1B.1	Found in chenopod scrub and valley and foothill grassland on alkaline soils. Blooms May-October.	Low; has not been found in CDPR rare plant surveys.
Mt. Hamilton coreopsis (*Coreopsis hamiltoni*)	CNPS 1B.2	Found in cismontane woodland. Blooms March-May.	Low; has not been found in CDPR rare plant surveys.
Livermore tarplant (*Deinandra bacigalupii*)	CNPS 1B.2	Found in wet meadows and seeps. Blooms June-October.	Low; has not been found in CDPR rare plant surveys. Preferred habitat not in project areas.
Hospital Canyon larkspur (*Delphinium californicum ssp. interius*)	CNPS 1B.2	Found in chaparral, cismontane woodland, and meadows and seeps. Blooms April-June.	Low; this species occurs in the canyon above Ravine Corral basin, but suitable habitat is not present in the project areas, and recent surveys did

Species Name	Status*	Habitat	Potential to occur on or near the project sites
			not find this species in the project areas.
Diamond-petaled California poppy (*Eschscholzia rhombipetala*)	CNPS 1B.1	Found in valley and foothill grassland. Blooms March-April.	Low; has not been found in CDPR rare plant surveys.
Stinkbells (*Fritillaria agrestis*)	CNPS 4.2	Found in chaparral, cismontane woodland, and valley and foothill grassland (sometimes on serpentine soils). Blooms March-June.	Moderate; known presence on CDPR properties.
Talus fritillary (*Fritillaria falcata*)	CNPS 1B.2	Found in chaparral, cismontane woodland, and lower montane coniferous forest on serpentine soils. Blooms March-May.	Low; has not been found in CDPR rare plant surveys. Serpentine soils not found on site.
Diablo helianthella (*Helianthella castanea*)	CNPS 1B.2	Found in broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. Blooms March-June.	Low; has not been found in CDPR rare plant surveys.
Napa western flax (*Hesperolinon sp. nov. "serpentinum")*	CNPS 1B.1	Found in chaparral on serpentine soils. Blooms May-July.	Low; preferred habitat and serpentine soils not found on site. Has not been found in CDPR rare plant surveys.
Legenere (*Legenere limosa*)	CNPS 1B.1	Found in vernal pools and wetlands. Blooms April-June.	Low; has not been found in CDPR rare plant surveys. Preferred habitat not within project areas.
Showy golden madia (*Madia radiata*)	CNPS 1B.1	Found in chenopod scrub, cismontane woodland, and valley and foothill grassland. Blooms March-May.	Low; has not been found in CDPR rare plant surveys.
Hall's bush mallow *(Malacothamnus hallii)*	CNPS 1B.2	Found in chaparral and coastal scrub. Blooms May-September.	Low; has not been found in CDPR rare plant surveys.
Mt. Diablo phacelia (*Phacelia phacelioides*)	CNPS 1B.2	Found in chaparral and cismontane woodland on rocky soils. Blooms April-May.	Low; has not been found in CDPR rare plant surveys.
Chaparral ragwort (*Senecio aphanactis*)	CNPS 2.2	Found in chaparral, cismontane woodland, and coastal scrub. Blooms January-April.	Moderate; known presence on CDPR properties.
Suisun Marsh aster (*Symphyotrichum lentum*)	CNPS 1B.2	Found in brackish and freshwater marshes and swamps at sea level. Blooms May-November.	Low; preferred habitat not on site and has not been found in CDPR rare plant surveys.
Saline clover *(Trifolium depauperatum var. hydrophilum)*	CNPS 1B.2	Found in marshes and swamps, valley and foothill grassland (on alkaline sites), and vernal pools. Blooms April-	Low; preferred habitat not on site and has not been

Species Name	Status*	Habitat	Potential to occur on or near the project sites
		June.	found in CDPR rare plant surveys.
Caper-fruited tropidocarpum *(Tropidocarpum capparideum)*	CNPS 1B.1	Found in valley and foothill grassland on alkaline clay. Blooms March-April.	Low; preferred habitat not on site and has not been found in CDPR rare plant surveys.

*Notes: FE – Federal endangered; FT – Federal threatened; SE – State endangered; ST – State threatened; FSC – Federal species of concern; CSSC – California species of special concern; SFP – State Fully Protected; WL – CDFG Watch List; BCC – USFWS Birds of Conservation Concern.
CNPS 1B – Plants rare, threatened or endangered in California and elsewhere;
CNPS 2 – Plants rare, threatened or endangered in California, but more common elsewhere;
CNPS 4 – Plants of limited distribution – a watch list.
Threat Rank:

- 0.1-Seriously threatened in California (high degree/immediacy of threat)
- 0.2-Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3-Not very threatened in California (low degree/immediacy of threats or no current threats known

Seventeen special-status species that potentially occur in the action area are discussed in detail below. Of those seventeen species, there are six wildlife species that have a high probability of occurring in the action area, western pond turtle, California tiger salamander, California red-legged frog, golden eagle, Townsend's big-eared bat, and loggerhead shrike. Only one plant species has the potential to occur in the project areas, the big tarplant.

Valley elderberry longhorn beetle (Desmocerus californicus dimorphus)

The Valley elderberry longhorn beetle is a federal threatened species. It is endemic to the upland riparian areas of the Central Valley of California (Linsley and Chemsak 1972). Neither subspecies of Desmocerus californicus have been observed outside of California.

The range of valley elderberry longhorn beetle (VELB) extends from Shasta County in the north to Fresno County in the south. It is mostly concentrated at elevations below 3,000 feet in the watersheds of the American, San Joaquin, and Sacramento Rivers. The range of VELB may overlap with that of D. c. californicus along the eastern edge of the Coast Ranges and in the southern San Joaquin Valley (Halstead and Oldham 2000).

VELB utilizes two species of elderberry plants: blue elderberry (Sambucus mexicana) and red elderberry (Sambucus racemosa var. microbotrys). Valley elderberry longhorn beetle does not seem to select one species over the other (Barr 1991). Habitat for VELB consists of elderberry shrubs (Sambucus sp.) occurring in upland riparian forests or elderberry savannas adjacent to riparian vegetation. In Collinge et al. (2001) VELB exit holes were consistently found to occur in clumps of elderberry bushes rather than in isolated bushes, in elderberry branches 2-4 inches in diameter, and in branches less than 3 feet above the ground. Collinge et al. (2001) also found that plants in isolated drainages are less likely to support VELB populations than plants with connectivity to other habitat.

Individual VELB rely on the same elderberry plant (or clump of plants) throughout the life cycle. Adults feed on the elderberry leaves and flowers. Mating pairs are typically observed on an elderberry shrub, eggs are laid on the stem or leaves of an elderberry plant and the larval and pupal stages develop within the elderberry stem pith (Barr 1991).

There is one reported CNDDB occurrence for this species within five miles of the action area on the Lawrence Livermore Laboratory property to the northeast of Mitchell Ravine. This occurrence is associated with an elderberry stand located in small canyon with a water seep north of Elk Ravine. Three breeding adults were observed at this location in May 2002.

Critical habitat for the VELB was established on August 8, 1980. There has been no proposed or designated critical habitat encompassing any portion of the CDPR properties.

Valley elderberries shrubs occur scattered throughout the scrub, savannah, and woodland habitats within the project area; however, there are no significant stands of elderberries in the area, and few are associated with riparian habitat favored by the beetle. As a result, the potential for VELB to occur in the area is low.

As many as 20 elderberry shrubs are contained within the boundary of the project areas (see Figure 8). At the Carrol Canyon basin, the relocated trailhead associated with modification of the basin is in close proximity to a single elderberry shrub, and construction of the new trailhead may result in impact to this plant (Figure 8). One elderberry shrub is in close proximity to the Tyson sediment basin that would be modified and one is located near the Kiln basin improvement area (Figure 8). With respect to proposed road improvements, seven shrubs are located along the Franciscan Loop Trail and ten are located at the edge of Kiln Road.

California tiger salamander (*Ambystoma californiense)*

The California tiger salamander (CTS) is a federally listed threatened species and a state listed endangered species. CTS inhabits annual grasslands in valleys and low-elevation foothills that contain suitable breeding habitat: any pool or pond that retains water for more than two months but dries up completely during the summer. Breeding habitat drying up during the summer months is believed to prevent aquatic predators of CTS larvae (predatory fish and amphibians) from becoming established. During the summer months, CTS will migrate from breeding pools to aestivation sites in annual grasslands. Aestivation habitat includes burrows of California ground squirrel and Botta's pocket gopher, but could also include any deep hole or crack in the soil (Jennings and Hayes 1994). Breeding takes place between December and March when rains fill the breeding pools and ponds. Females lay eggs that attach to emergent vegetation in the pools. Larvae feed on aquatic invertebrates near the bottom of the pools in the mud. Larvae undergo metamorphosis to juveniles over a minimum 10-week period. Once CTS individuals emerge as juveniles, they leave the breeding pools and enter the grasslands where they feed on insects, isopods, and worms. CTS distribution between breeding and upland habitats is still relatively unknown; however, it has been shown that juvenile CTS can travel up to one mile from breeding sites to refuge sites (Jennings and Hayes 1994).

On August 23, 2005, the USFWS designated 199,109 acres of critical habitat in 19 counties for the central California population of CTS. Neither the proposed nor finalized critical habitat designations included any portion of the project areas. The nearest California tiger salamander critical habitat is about 18 miles away, northwest of Livermore.

California tiger salamander is presumed to be widespread at the CDPR properties and yearly surveys have found numerous occurrences (CDFG 2009). California tiger salamander larvae were observed in Ravine Corral basin in 2008. All of these observations were on the Alameda-Tesla property, which encompasses the western half of the CDPR properties; this area is currently not open to the public. The upland grassland habitat in the project area may contain

potential aestivation sites for California tiger salamander; however, observations of the action area show a distinct lack of rodent burrows (TRA, personal observation).

California red-legged frog (*Rana draytonii*)

The California red-legged frog (CRLF) is a federally listed threatened species and a state species of special concern. Red-legged frog is known to occur in grassland, riparian woodland, oak woodland, and coniferous forest but prefers quiet freshwater pools, slow-flowing streams, and freshwater marshes with heavily vegetated shores for breeding. These frogs stay near the shore hidden in vegetation rather than in open water. Red-legged frog frequently occupies seasonal bodies of water, and in some areas these may be critical for persistence. It is speculated that California red-legged frog may lie dormant during dry periods of the year or during drought. California red-legged frog is thought to disperse widely during autumn, winter, and spring rains. Juveniles use the wet periods to expand outward from their pond of origin and adults may move between aquatic areas. Frogs disperse through many types of upland vegetation and use a broader range of habitats outside of breeding season. Sheltering habitat for red-legged frog is potentially all aquatic, riparian, and upland areas with the range of the species and includes any landscape features that provide cover, such as existing animal burrows, boulders or rocks, organic debris such as downed trees or logs, and industrial debris. Dispersal distances are typically less than 0.5 mile, with a few individuals moving up to 1-2 miles (Fellers 2005).

The final critical habitat designation was recently revised by the USFWS (75 FR 12815-12864; March 17, 2010). The nearest California red-legged frog designated critical habitat is approximately 15 miles northwest of the CDPR properties near the Contra Costa – Alameda county line. The original Recovery Plan for the California Red-legged Frog (USFWS 2002) recognized eight recovery units within California. One of those units encompasses the Corral Hollow Creek watershed, including the project areas.

Since 1998, yearly amphibian surveys conducted by CDPR personnel have resulted in several observations of red-legged frogs within a number of basins and stock ponds in the watershed as well as portions of Corral Hollow Creek within the SVRA. As recently as June 2010, a CRLF was observed in mine shaft located off of the Franciscan Loop Trail.

Western pond turtle (*Actinemys marmorata*)

The western pond turtle is a state species of special concern. The turtle ranges in size from 3.5 to 7 inches and is the only freshwater turtle native to the San Francisco Bay Area. It occurs from the Oregon border to the Mexican border, where it is found in ponds and small lakes with abundant vegetation. Turtles inhabit marshes, slow-moving streams, reservoirs, and occasionally brackish water. The western pond turtle feeds on aquatic plants, beetles, aquatic invertebrates, fishes, frogs, and carrion. It requires basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks, as well as underwater retreats to hide from predators and humans. Females deposit their eggs in nests in sandy banks or in the case of foothill streams, in upland areas away from the stream. Nests have been observed in many soil types, from sandy to very hard, and have been found up to 400 meters (1300 feet) from the water. Nesting occurs from May to July with turtles emerging 3-4.5 months later. Certain fish species, bullfrogs, garter snakes, wading birds and some mammals prey on hatchlings and juveniles.

During annual surveys, CDPR employees sighted the western pond turtle in the Kiln basin in 2010, the Tesla stock pond in 2009 and in Corral Hollow Creek in 2005 and 2007. No observations of turtles occurred during site visits to the project areas.

Golden eagle (*Aquila chrysaetos*)

The golden eagle is a state fully protected species and is one of North America's largest predatory birds. More common in southern California than in northern California, this species ranges from sea level up to 11,500 feet. Its habitat typically consists of rolling foothills, montane areas, sage-juniper flats, and desert; it avoids heavily forested areas. The golden eagle eats mostly rabbits and rodents, but also other small mammals, birds, reptiles, and carrion. The diet is most varied in the nonbreeding season. Open terrain is required for hunting such as grasslands, deserts, savannahs, and early successional stages of forest and shrub habitats. Breeding begins in late January with eggs laid from early February to late May. Golden eagle nests on cliffs of all heights and in large trees in open areas. Rugged, open habitats with canyons and escarpments are used most frequently for nesting. Nest construction begins in fall and continues through the winter (Kochert et al. 2002). They winter in areas between 1,500 feet and 8,200 feet. Golden eagles are commonly known to inhabit the SVRA (Elsholz and Swolgaard 2008).

Townsend's big-eared bat (*Corynorhinus townsendii*)

The Townsend's big-eared bat is a state species of special concern. This bat is found throughout California but its distribution pattern is not well known (Zeiner et al. 1990). It is found in all habitats in California except for alpine and subalpine, and it prefers habitats with a moderate supply of moisture. The Townsend's big-eared bat requires caves, mines, tunnels, buildings, and other man-made structures for roosting. It may use separate structures for day, night, and maternity roosts (Zeiner et al. 1990). Small moths are its principle food source (Zeiner et al. 1990). The Townsend's big-eared bat is a known resident of the SVRA (Elsholz and Swolgaard 2008).

Loggerhead shrike (*Lanius ludovicianus*)

The loggerhead shrike is a state species of special concern and a USFWS bird of conservation concern. A predatory songbird, the loggerhead shrike has declined drastically throughout the last half of the 20th century. It is essentially gone from the northeastern part of the range, and continues to decline throughout its range. Loggerhead shrike differs from other songbirds in that its diet includes small vertebrate prey, such as small mice and birds. It does not have sharp talons as raptors do, but uses a special tactic of impaling its prey on sharp objects such thorns or barbed wire.

Occurring exclusively in North America, loggerhead shrike typically inhabits grasslands interspersed with shrubs and trees which provide nesting and perching sites. It frequents open spaces such as pastures, lawns and freshly-plowed land. Loggerhead shrike builds bulky, sturdy nests of stick and roots, well-lined with a variety of soft materials such as hair, feathers and cotton. Loggerhead shrike lays four to seven (usually five or six) speckled eggs which take about 17 days to hatch. The young leave the nest after about 19 days and may remain with the parents for up to a month while learning to hunt. Mortality of young birds is very high during this period. Shrikes may raise two broods in a year. Nest sites are usually reused the following year if they have not been disturbed.

Numerous observations have been reported from the Lawrence Livermore Laboratory property to the northeast of the SVRA (CNDDB 2010). It has also been frequently observed within the SVRA (Elsholz, pers. Comm.).

Silvery legless lizard (*Anniella pulchra pulchra*)

The silvery legless lizard is a state species of special concern. The silvery legless lizard primarily occurs in warm, moist, loose soil with plant cover. This species of legless lizard occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather often indicate suitable habitat. Its diet mostly consists of larval insects, beetles, termites, and spiders.

Two sightings have been reported from the Lawrence Livermore Laboratory property to the northeast of the SVRA (CNDDB 2010). No observations of silvery legless lizard have occurred within the SVRA or during site visits to the project areas.

Pallid bat (*Antrozous pallidus*)

The pallid bat is a state species of special concern. This bat occurs in oak woodland habitat in central and northern California, among other habitat types. Water must be available close by at all sites. Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees (*e.g.*, basal hollows of coast redwoods and giant sequoias, bole cavities of oaks, exfoliating Ponderosa pine and valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards), and various human structures such as bridges (especially wooden and concrete girder designs), barns, porches, bat boxes, and human-occupied as well as vacant buildings. Roosts generally have unobstructed entrances/exits, and are high above the ground, warm, and inaccessible to terrestrial predators. This species has also been found roosting on or near the ground under burlap sacks, stone piles, rags, and baseboards (WBWG 2005).

Two sightings have been recorded less than 5 miles away from the SVRA (CNDDB 2010). No observations of pallid bat or roosts have occurred within the SVRA or during site visits to the project areas.

Ferruginous hawk (*Buteo regalis*)

The nonbreeding and overwintering population of ferruginous hawk is on CDFG's watch list and it is considered a bird of conservation concern by the USFWS. Ferruginous hawk frequents open grasslands, sagebrush flats, desert scrub, pinyon-juniper scrub, and low foothills surrounding valleys (Zeiner et al. 1990). In California, this species is most common in southwestern grassland and agricultural habitats. Its diet consists of mostly eats rabbits, ground squirrels, and mice.

Two sightings have been reported from the Lawrence Livermore Laboratory property to the northeast of the SVRA (CNDDB 2010). No observations of ferruginous hawk have occurred within the SVRA or during site visits to the project areas.

Prairie falcon (*Falco mexicanus*)

The prairie falcon is on CDFG's watch list and is a USFWS bird of conservation concern. This falcon species prefers dry, open grasslands and deserts punctuated by cliffs or bluffs. The main food source consists mostly of several species of ground squirrel (Steenhof 1998). Nest sites

are usually in cavities, ledges, and crevices on buttes, bluffs, and rock outcrops. Nesting begins in March and fledglings begin to leave the nest in August. The prairie falcon is a known inhabitant of the SVRA (Elsholz and Swolgaard 2008).

San Joaquin whipsnake (*Masticophis flagellum ruddocki*)

The San Joaquin whipsnake is a state species of special concern. This subspecies is endemic to California and occurs primarily from the Sacramento delta region southward in the San Joaquin Valley and the Coast Ranges to Kern and Santa Barbara counties. This species occurs in open, dry, treeless areas, including grassland and saltbush scrub. It takes refuge in rodent burrows, under shaded vegetation, and under surface objects. Its diets consists of small mammals including bats, nestling and adult birds, bird eggs, lizards, snakes, amphibians, and carrion (Stebbins 2003). Hatchlings and juveniles will eat large invertebrates. Breeding usually takes place in May with hatchlings emerging in late July and early August (Stebbins 2003).

The San Joaquin whipsnake is known from ten records in the vicinity of Corral Hollow (San Joaquin Council of Governments 2000), and has been observed on CDPR property although not in the vicinity of the project areas (pers. comm. C. Elsholz).

Alameda whipsnake (*Masticophis lateralis euryxanthus*)

The Alameda whipsnake is a federal and state threatened species. Historically, the Alameda whipsnake has always had an extremely restricted distribution, including only the coastal scrub, chaparral, grassland, and oak woodland communities in the San Francisco east bay region in Contra Costa, Alameda, and parts of San Joaquin and Santa Clara counties. The Alameda whipsnake often climbs vegetation and seeks shelter in burrows, rocks, and woody debris. This species often uses rock outcrops, soil crevices, and debris piles for catching prey. Whipsnake generally uses grasslands during the spring for mating. Alameda whipsnake preys primarily on western fence lizard (*Sceloporus occidentalis*) and western skink (*Eumeces skiltonianus*), but also feeds on frogs, snakes, and birds (Stebbins 2003). In general, Alameda whipsnake hibernates from November through March, then breeds from March through mid-June (USFWS 2002). Designated critical habitat for the Alameda whipsnake was finalized in October of 2006. Designated critical habitat encompasses the western half of SVRA and the majority of the Alameda-Tesla property.

Surveys within SVRA properties have resulted in observations of chaparral whipsnakes and intergrades between the chaparral and Alameda whipsnakes (EDAW 2005).

Coast horned lizard (*Phrynosoma blainvillii*)

The coast horned lizard is a state species of special concern. This species inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains. Mostly found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil, the coast horned lizard is often found along sandy washes with scattered shrubs and along dirt roads, and frequently near ant hills. Ants make up to 50 percent of this lizard's diet. It also eats honeybees and other insects.

Several sightings have been reported from the Lawrence Livermore Laboratory property to the northeast of Mitchell Ravine (CNDDB 2010) and two occurrences have been documented on CDPR properties (pers. comm. C. Elsholz). The coast horned lizard was not observed during site visits.

American badger (*Taxidea taxus*)

An uncommon resident, the American badger is a state species of special concern. Adults of this non-migratory species are primarily nocturnal, whereas, juveniles are mostly active during the day. Badgers are active year round; however, in the winter, they go through states of torpor for variable periods (up to 29 hours; Long 1973). Badger is found in a variety of open, arid habitats, and is mostly associated with grasslands, mountain meadows, and desert scrub. Friable soils, a sufficient prey base of rodents, and uncultivated ground are required. The American badger's distribution extends throughout California and the elevational range extends from below sea level (Death Valley) to over 12,000 feet.

The American badger is a known inhabitant of the SVRA (Elsholz and Swolgaard 2008). The slopes within the SVRA are steep and are unlikely to contain dens, and dens are not likely to be present in the project areas.

San Joaquin Kit Fox (*Vulpes macrotis mutica*)

The San Joaquin kit fox is a federal endangered and state threatened species. Distinguished by its small size, 4 to 6 pounds, the nocturnal kit fox lives primarily in the flat grasslands of California's Central Valley south of Contra Costa County. The kit fox diet consists mostly of ground squirrels, kangaroo rats, rabbits, mice, insects, carrion, and ground-nesting birds (Williams et al. 1998). Kit fox prefers dens located in soft, friable soils; in hard, clay soils they enlarge holes started by ground squirrels and badgers (Williams et al. 1998). The majority of dens occur in flat grasslands or gently sloping hills, washes, drainages, or roadside berms (Williams et al. 1998). Kit fox use several dens throughout their territories for cover; one den will be turned into a natal den and activity is usually obvious (dirt spray, prey items, scat).

The SVRA lies within the range of the San Joaquin kit fox. However, few fox sightings have been reported in recent years. The CNDDB reports five occurrences of kit fox within five miles of the SVRA and most of those dates from the mid-1970s. The most recent observation, from 2002, was about 1.5 miles from the SVRA. Most of the SVRA habitat is too steep and densely vegetated to support San Joaquin kit fox denning habitat and is not heavily used by ground squirrels.

Big tarplant (*Blepharizonia plumose*)

Big tarplant is an extremely rare summer flowering plant and is listed as a CNPS 1B.1 species (rare and seriously threatened in California). It grows in valley and foothill grasslands in association with wild oats (*Avena* spp.), bromes (*Bromus* spp.), common fiddleneck (*Amsinckia menziesii var. intermedia*), and California matchweed (*Guiterrezia californica*). An annual plant, this species blooms from July to October. Populations are documented to occur at the Lawrence Livermore Laboratory to the northeast of the SVRA as well as at the western end of CDPR's Alameda-Tesla property (CNDDB 2010). The potential presence of this species is low; however, there is the possibility of it occurring within the annual grasslands of the SVRA.

E. Wetland and Riparian Resources

Wetlands, riparian habitats, and streams support rich communities of native organisms both in the water and in adjoining riparian areas. Numerous vertebrate and invertebrate populations are affected by water availability and quality, habitat alteration, and introduction of exotic species. Riparian areas are defined as the terrestrial communities found at the margins of streams,

lakes, and wetlands, and encompass the entire floodplain of a given water body (Naiman et al. 1993).

The SVRA contains seven ephemeral drainages that carry storm water from the watershed toward Corral Hollow Creek, six sedimentation basins, a restoration pond and 15,284 feet (39.07 ac) of Corral Hollow Creek itself. The SVRA contains a total length of 25,125 feet of ephemeral drainages, 0.73 acre of palustrine open water habitat, and 0.47 acre of wetland. The following waters and wetlands occur in the project area.

Ephemeral Drainages - The roads and trails within the SVRA are adjacent to several ephemeral drainages, most of which flow to Corral Hollow Creek after storm events, are potentially under Corps jurisdiction and are within the jurisdiction of the RWQCB and California DFG. These drainages are characterized by downcut banks and clearly evident beds. They are narrow, and the OHWM shows on the banks which range from 2 to 15 feet apart. The OHWM is generally indicated by shelving, rafted material, scour or water marks. The vegetation varies, and includes grassland, oak woodland and scrub. Characteristic plant species in the scrub include coyote brush (Baccharis pilularis), elderberry (Sambucus sp.), buckbrush (Rhamnus sp.), sage (Salvia mellifera, Artemisia californica), wild cucumber (Marah fabaceus), pitcher sage (Lepechina calycina), California figwort (Scrophularia californica), and the occasional cottonwood (Populus sp.) or willow (Salix sp.). Wetland vegetation is not supported in these drainages except where the drainage enters Clear Basin.

Corral Hollow Creek – This is an intermittent creek that flows about five months a year. Hydrophytic vegetation along the creek is dominated by mule fat, willow and Fremont cottonwood trees, with plants occurring along the banks and within the stream channel itself. However, the vegetation is sparse and patchy and its specific location can vary from year to year. Soils within the channel are a mix of alluvial sediments including gravel, sand, clay and silty clay. Western spadefoot toad and California red-legged frog have been detected in Corral Hollow Creek within the SVRA.

Kiln Basin - This basin is near Corral Hollow Creek and is an open water basin that does not contain wetland vegetation. The upper portion of this basin is cleaned out annually. A Western pond turtle (*Actinemys marmorata)* was observed in this basin in the spring of 2010. A single elderberry plant is within the footprint of the proposed water quality basin for Kiln Canyon, and construction of the basin may result in impact to this plant.

Tyson’s Basin - This basin is near Corral Hollow Creek and provides palustrine open water habitat that does not contain wetland vegetation. Overflow from this basin drains to Corral Hollow Creek. This basin is cleaned out every year. A single elderberry plant is in close proximity water quality basin and improvements to the basin may result in impact to this plant.

Carrol Basin - This basin is adjacent to Corral Hollow Creek and is an open water basin that does not contain wetland vegetation. This basin is cleaned out annually. It is about 12 feet deep at the downstream end and 2 feet deep at the upstream end. A single elderberry plant is in close proximity to the relocated trailhead associated with modification of the basin, and construction of the new trailhead may result in impact to this plant.

Discussion:

Would the project:

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

Less than Significant Impact with Mitigation. The following describes the impacts on each of the special status species described above and identifies mitigation measures to reduce impacts to less than significant.

Impact BIO-1: Special Status Amphibians and Reptiles

Implementation of the projects would result in temporary disturbance of upland habitat that has the potential to support the California tiger salamander. The upland habitat in the project areas may contain potential refugial sites for California tiger salamander; however, rodent burrows were not evident during site surveys. Implementation of Mitigation Measure BIO-1 would minimize potential for direct effects to California tiger salamander.

Implementation of the projects would result in the temporary disturbance of upland and basin habitats that have the potential to support the California red-legged frog. The upland habitat in the project areas may contain potential refugial sites for the red-legged frog; however, rodent burrows were not evident during site surveys, although red-legged frog can aestivate in soil cracks or under other cover. Implementation of Mitigation Measure BIO-1 would minimize potential for direct effects to the California red-legged frog.

Implementation of the projects would result in the temporary disturbance of habitat that has the potential to support the western pond turtle. Implementation of Mitigation Measure BIO-1 would minimize direct and indirect impacts to less than significant.

Implementation of the projects would result in the temporary disturbance of habitat that has the potential to support the San Joaquin whipsnake. Implementation of Mitigation Measure BIO-1, would minimize direct and indirect impacts to less than significant.

Implementation of the projects would result in the temporary disturbance of habitat that has the potential to support the Alameda whipsnake. With the implementation of the avoidance and mitigation measures listed in Mitigation Measure BIO-1 direct and indirect impacts would be minimized to less than significant.

Implementation of the projects would result in the temporary disturbance of habitat that has the potential to support the coast horned lizard. With the implementation of Mitigation Measure BIO-1 direct and indirect impacts would be minimized to less than significant.

Two sightings of the silvery legless lizard have been reported from the Lawrence Livermore Laboratory property to the northeast of the SVRA (CNDDB 2010). No observations of silvery legless lizard occurred during site visits to the project property. Implementation of the project would result in the temporary disturbance of habitat that has the potential to support the silvery legless lizard. With the implementation of Mitigation Measure BIO-1 direct and indirect impacts would be minimized to less than significant.

Mitigation Measure BIO-1:

1. Obtain take authorization/permits or concurrence of no take from the U. S. Fish and Wildlife Service (Service) for the California red-legged frog (CRLF), and a consistency determination from California Department of Fish and Game (CDFG) for the following species that are both federally and state listed: California tiger salamander (CTS) and Alameda whipsnake. Upon completion of the authorization/permit process, CDPR shall implement the terms and conditions of the authorizations.

2. To the extent feasible, and unless approved by the wildlife agencies, all work shall occur between May 1 and November 1 to avoid the mating and breeding period(s) of CRLF and CTS. During this time, work should only occur when standing water is no longer present in the basin.

3. No more than two weeks prior to the start of construction, a Service and/or CDFG-approved biologist shall survey the project areas for CRLF, CTS, western pond turtle, Alameda whipsnake, and other special status reptiles, and their habitat. If the species are found in the project area, the biologist shall either capture and remove the animal and release it away from harm, or direct the animal away from the area of harm. The name and credentials of biologists shall be submitted to the Service for approval at least 15 days before commencement of work.

4. A Service and/or CDFG-approved biologist shall conduct a training session for all construction personnel involved in implementation of the projects. At a minimum, the training shall include a description of all of the species and their habitat, the importance of the species and its habitat, the general measures that are being implemented to protect and conserve the CRLF, CTS, western pond turtle, Alameda whipsnake, and other special status reptiles as they relate to the proposed action, and the boundaries within which the proposed action may be accomplished.

5. During work activities, all trash that may attract predators shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas. The monitoring biologist shall inspect the work site at the beginning and end of each work day to ensure all trash and debris have been properly contained.

6. All trenches, pits, or open areas shall be backfilled or plated at the end of each work day to prevent wildlife from becoming trapped. The monitoring biologist shall check all open areas each morning for entrapped wildlife. No work shall begin until the biological monitor has inspected the open areas.

7. All fueling and maintenance vehicles and other equipment and staging areas shall occur at least 20 meters from riparian habitat or water bodies. CDPR or its contractor shall ensure that contamination of habitat does not occur during such operations. Prior to the start of construction, the CDPR or its contractor shall prepare a spill prevention plan that would require prompt and effective response to any accidental spills.

8. Exclusionary fencing (silt fencing or other appropriate materials) may be required to be installed at appropriate locations along the project boundaries to prevent individual CRLF, CTS, western pond turtle, Alameda whipsnakes, or other special status reptiles from entering the work area. The need and location of the exclusionary fencing shall be determined prior to construction with the Service and/or CDFG-approved biologist.

9. Monthly monitoring reports shall be submitted to regulatory agency staff which describes project status, any species found, and measures used to prevent impacts to the species.

10. To prevent amphibians and other wildlife from becoming entangled or trapped, plastic monofilament netting (erosion control matting) or similar material will not be used at the project site. Acceptable substitutes include coconut coir matting or tackified hydro-seeing compounds. If wildlife is found within the matting at any time, the matting shall be removed immediately and replaced, if necessary, with a Service and CDFG approved substitute.

Impact BIO-2: Valley Elderberry Longhorn Beetle

As many as 20 elderberry shrubs are contained within the boundary of the project areas (see Figure 8). At the Carrol Canyon basin, the relocated trailhead associated with modification of the basin is in close proximity to a single elderberry shrub, and construction of the new trailhead may result in impact to this plant (Figure 8). One elderberry shrub is in close proximity to the Tyson sediment basin that would be modified and one is located near the Kiln basin improvement area (Figure 8). With respect to proposed road improvements, seven shrubs are located along the Franciscan Loop Trail and ten are located at the edge of Kiln Road. These shrubs will be impacted by road work (Figure 8). In order to mitigate the impact of removal of the twenty elderberry shrubs, CDPR would implement Mitigation Measure BIO-2. Further mitigation and details of the relocation and mitigation planting will be determined during consultation with the USFWS under Section 7 of the Endangered Species Act.

Mitigation Measure BIO-2:

1. Obtain take authorization/permits from the USFWS for the VELB Upon completion of the authorization/permit process, CDPR shall implement the terms and conditions of the authorizations for the VELB.

2. Prior to any ground disturbing or construction activities within 100 feet of the identified elderberry shrubs, the CDPR shall consult with the U.S. Fish and Wildlife Service. CDPR shall install and maintain a 4-foot high construction fence around the perimeter of the elderberry shrub. No grading or any other ground disturbing activities shall be conducted within the fenced protected area without prior verification that the requirements of the USFWS have been satisfied including the issuance of any necessary permits or authorizations.

3. CDPR shall avoid and protect the VELB habitat (elderberry stalks one inch in diameter or greater) where feasible. Where avoidance is infeasible, CDPR shall develop and implement a VELB mitigation plan in accordance with the most current USFWS mitigation guidelines for unavoidable take of VELB habitat pursuant to Section 7 of the Federal Endangered Species Act. The mitigation plan shall include, but might not be limited to, relocation of elderberry shrubs, planting of elderberry shrubs, and monitoring of relocated and planted elderberry shrubs.

Impact BIO-3: Impacts on Nesting Birds

Golden eagles are commonly known to inhabit the SVRA properties (Elsholz and Swolgaard 2008); however, no direct or indirect effects from project activities are expected with the implementation of Mitigation Measure BIO-3. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently,

project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of golden eagle habitat is anticipated.

Numerous sightings of the loggerhead shrike have been reported from within the SVRA and on the Lawrence Livermore National Laboratory property to the northeast of the SVRA (CNDDB 2010). No observations of loggerhead shrike occurred during site visits to the project property. No direct or indirect effects from project activities are expected with the implementation of Mitigation Measure BIO-3. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of loggerhead shrike habitat is anticipated.

No direct or indirect effects from project activities are expected on the ferruginous hawk with the implementation of Mitigation Measure BIO-3. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of ferruginous hawk habitat is anticipated.

The prairie falcon is a known inhabitant of the SVRA properties (Elsholz and Swolgaard 2008); however, no direct or indirect effects from project activities are expected with the implementation of Mitigation Measure BIO-3. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of prairie falcon habitat is anticipated.

Mitigation Measure BIO-3:

All tree removal, trimming and ground disturbing activities should be scheduled to take place outside of the breeding season (February 15 to August 31). However, if activities are unavoidable during the breeding season, a qualified biologist should conduct a survey for nesting birds. If active nests are not present, project activities can take place as scheduled. If active nests are detected, CDFG should be contacted on how to proceed. Typically, a buffer would be established around the nest. CDFG usually accepts a 50-foot radius buffer around passerine and non-passerine nests, and up to a 300-foot radius for raptors.

Impact BIO-4: Impacts on the American Badger and San Joaquin Kit Fox

The American badger is a known inhabitant of the SVRA properties (Elsholz and Swolgaard 2008). Implementation of project elements would result in the temporary disturbance of habitat that has the potential to support the badger. With the implementation of Mitigation Measure BIO-4 direct and indirect impacts would be minimized. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of badger habitat is anticipated.

The park lies within the range of the San Joaquin kit fox; however, no sightings have occurred within the SVRA properties. The CNDDB reports five occurrences of kit fox within five miles of the park and most of those dates were from the mid-1970s. The most recent observation, from 2002, was about 1.5 miles from the park. Most of the SVRA habitat is too steep and densely vegetated to support San Joaquin kit fox denning habitat and is not heavily used by ground squirrels.

Mitigation Measure BIO-4:

1. A survey should be completed to search for badger dens within one week prior to the start of project activities. If American badger is located on-site, potential loss of individual animals shall be avoided through active trapping and relocation of badgers to suitable off-site habitat by a qualified biologist and in coordination with the CDFG, as approved by CDFG.

2. Obtain take authorization/permits or concurrence of no take from the U. S. Fish and Wildlife Service (Service) and a consistency determination from California Department of Fish and Game (CDFG) for the San Joaquin kit fox. Upon completion of the authorization/permit process, CDPR shall implement the terms and conditions of the authorizations.

Impact BIO-5: Impacts on Special Status Bats

Two sightings of the pallid bat have been recorded less than 5 miles away from the SVRA (CNDDB 2010). No observations of pallid bat or roosts were observed during site visits. No direct or indirect effects from project activities are expected with the implementation of Mitigation Measure BIO-5. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of pallid bat habitat is anticipated.

The Townsend's big-eared bat is a known resident of the SVRA properties (Elsholz and Swolgaard 2008); however, no direct or indirect effects from project activities are expected with the implementation of the Mitigation Measure BIO-5. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of Townsend's bit-eared bat habitat is anticipated.

Mitigation Measure BIO-5:

1. *Pre-Construction Survey.* A qualified biologist ("bat biologist") shall be retained to conduct a pre-construction survey for roosting bats in any trees that are to be removed. If no roosting bats are found, no further mitigation is required. If a bat roost is found, the following measures shall be implemented to avoid impacts to roosting bats.

2. *Avoidance.* If non-breeding bats are found in a tree to be removed, the individuals shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity. Demolition should then follow at least one night after initial disturbance for airflow. This action should allow bats to leave during darkness, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight.

3. *Special-Status Bats.* If special-status bats are found in tree to be removed, a bat nest box plan for the project areas shall be developed and state-of-the-art bat nest box technology would be employed. A qualified bat biologist would be asked to review the design and placement of nest boxes.

Impact BIO-6: Impacts on Special Status Plants:

No direct or indirect effects from project activities are expected on the big tarplant with the implementation of Mitigation Measure BIO-6. Construction equipment and vehicular access outside of the project areas will be restricted to existing park access roads. Consequently, project-related activities outside of the project areas are expected to be minimal and no direct disturbance or indirect destruction of big tarplant habitat is anticipated.

Mitigation Measure BIO-6:

Focused plant surveys shall be conducted to determine if big tarplant is present within any of the specific work areas. One to two site visits may be necessary to intercept this species during its flowering period. If the plant is found, every effort should be made to avoid the species. If avoidance is not possible, attempt relocation to a risk-free location, or, in consultation with experts, determine another means to mitigation for the loss of the plant/s, such as obtaining seeds from other sources and planting seedlings in risk-free areas.

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

Less than Significant Impact. The purpose of the projects is to reduce erosion and sedimentation that leads to siltation of Corral Hollow Creek and improve conditions for the re-establishment of riparian vegetation in the creek. Therefore, the projects would have a beneficial impact on the creek. The three rehabilitated sediment basins do not contain riparian vegetation or any other sensitive natural communities.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact. Impacts to stream channels (bed and bank) are specifically addressed by the CDFG Code §§1600 *et seq*. and may fall under the jurisdiction of the Clean Water Act §404 permit process and the Porter-Cologne Water Quality Control Act. Permit provisions of the Clean Water Act regulating dredge and fill operation are enforced by the U.S. Army Corp of Engineers (USACE). Permit provisions of the Porter-Cologne Water Quality Control Act are enforced by the Regional Water Quality Control Board (RWQCB). The USACE also exerts jurisdiction over "waters of the U.S." which include territorial seas, tidal waters, and non-tidal waters in addition to wetlands and drainages that support wetland vegetation, exhibit ponding or scouring, show obvious signs of channeling, or have discernible banks and high water marks.

A preliminary wetland delineation was completed for potential waters and wetlands found in the SVRA. The USACE provided a preliminary jurisdictional determination in August 2010 agreeing that the waters and wetlands identified in the preliminary wetland delineation have the potential to be jurisdictional. Consultation with and permits from USACE, CDFG, and RWQCB have been received for ongoing on projects and activities taking place in the SVRA and on the adjacent Alameda-Tesla properties. Any terms and conditions of the agencies permits wil be incorporated into this project (refer to Mitigation Measure BIO-1).

Generally, the issuance of permits from these agencies for permanent impacts to regulated waters, wetlands, or riparian habitat requires mitigation at a 2:1 ratio. However, implementation of the roads and trails, and low water crossings rehabilitation projects and the sediment basin maintenance

project would cause only short-term temporary disturbance to wetlands. Specifically implementation of the roads and trails and low water crossing projects would reduce sedimentation to Corral Hollow Creek and improve conditions for the re-establishment of riparian vegetation in the creek. The sediment basin rehabilitation projects would improve the holding capacity of the basins and movement of water through the culverts by removing accumulated sediment and silt. The basins would be restored to open water habitat.

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?

No Impact. The SVRA comprises of extensive open space in all directions and provides sufficient wildlife corridors available to wildlife travelling through the region. The projects would not change the environment at the locations where the work would take place. The project areas would be occupied by workers and construction equipment for a three to six month period, but the work would take place during the day when most species are not moving through.

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

No Impact. The projects would all take place within the SVRA on properties owned by the state. No local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance are in affect on these properties.

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

No Impact. The project sites are not located in an area covered by a habitat conservation plan or natural community conservation plan.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.5 CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Discussion:

Environmental Setting

The following discussion is taken from a Project Evaluation 5024 Report conducted for the Project by Archaeologists Kelly Long and Alicia Perez of the California Department of Parks and Recreation. Excerpts are taken directly from the CDPR Project Evaluation conducted under Public Resources Code 5024 and 5024.5.

Historic Context

The project area lies within an area that contains resources related to important events in California's prehistory and history. The Carnegie SVRA lies in the boundary area between two ethnographic Native American groups, the Northern Valley Yokuts and the Ohlone (Costanoan). Several prehistoric sites are recorded within Corral Hollow Creek. Although there are no major village sites in the SVRA, the area is assumed to have been an important habitation and resource processing area.

The Corral Hollow area may have been a travel corridor during the prehistoric era. Early visitation of the uplands is evidenced by the presence of a substantial PCN petroglyph (CA-ALA-571) and a lithic concentration (ASC-34-08-58). Archaeological site CA-ALA-443, a prehistoric habitation location with burials, cremations, midden, groundstone, and a host of other artifacts, seems likely to have an early occupational episode about which little is known, and a later episode that appears to date to the Late Horizon/ Emergent Period and is consistent with Augustine Pattern artifact assemblage, and Northern Yokuts occupation specifically. A handful of bedrock mortar features have been identified that are similarly attributable to the Augustine Pattern cultural complex, while prehistoric lithic and groundstone artifacts have been found in two other locations in the SVRA. Taken together, the number of sites is quite small

considering the size of the SVRA, and there do not seem to be well-defined occupational episodes save for a handful of Augustine components.

Historically speaking, the present-day Carnegie SVRA was once a booming place of regional economic importance due to coal mining and brick manufacturing between 1855 and 1911. In November of 1855, coal was discovered at Corral Hollow by railroad surveyors and sold to the Coast Range Coal Mining Company of San Francisco in the following year. The Coast Range coal mine sold 60 tons of coal in Stockton, making it the first commercial coal mine in the state (Mosier and Williams 2002:5). In 1856 John O'Brien, a sheepherder discovered coal on his sheep ranch at Tesla one mile west of the Coast Range mine (Mosier and Williams 2002:5). Shortly after the discovery, the Pacific Coal Mining Company was organized and later named the Eureka Mine (Mosier and Williams 2002:6). Carrell was the owner of the Eureka Coal Company until his death in 1880 (Hoover et al. 1990:358). Other early coal mines in Corral Hollow include the Commercial, Alameda, and People mines; all located a couple of miles east of the Coast Range mine. Each of these mines had a bunkhouse and mine buildings. Rasmus Christofferson had a roadside stand near the Commercial mine to sell poultry and eggs (Williams 2004:94). Thomas Hennessey had a saloon on the road at the Alameda mine (Williams 2004:429). Over 4,700 tons of coal was produced from these mines (Mosier 1983:76). Most of this coal was sent to the Ellis coaling station, near Tracy, and used in the first steam engines of the Central Pacific Railroad Company that pulled trains over the Livermore Mountains.

At Harrisville, one mile west of the Eureka mine, Thomas Harris and Jenkin Richards discovered coal on Arroyo Seco Creek in 1862 (Mosier 1978:11). This developed into a mining camp of about 100 Welsh coal miners and named for Thomas Harris (Mosier 1978:57). The camp was served by a large store, two lodging houses, two saloons, a blacksmith shop, a livery stable, and a school (Mosier 1978:61). A daily stage connected Harrisville with Livermore, six miles to the west (Mosier 1978:57). The miners lived in a couple of bunkhouses and several family cabins. The important producers were the Livermore, Pen Daren, Richards, and Summit coal mines, which shipped out over 8,500 tons of coal (Mosier 1978). These mines were closed by 1890, when Harrisville was incorporated into Tesla (Mosier 1978:132).

In April of 1890, John Treadwell, a San Francisco millionaire, and his brother James began purchasing land in Corral Hollow that was previously part of the Commercial Mine and the Eureka Mine (Mosier and Williams 2002: 9). By the end of the land transaction, the brothers owned 4,240 acres in Corral Hollow (Mosier and Williams 2002:10). The Tesla Coal Mine commenced under their supervision on 1 August 1896 (Mosier and Williams 2002:85). John Treadwell chose to name the mine Tesla in honor of the renowned inventor, Nikola Tesla (Mosier and Williams 2002:87). The San Francisco and San Joaquin Coal Mining Company was a corporation organized by James Treadwell in February of 1895. This corporation managed the affairs of the new coal mines (Mosier and Williams 2002:25). On 29 April 1895, the Alameda and San Joaquin Railroad Company was incorporated with a capital stock of $500,000 for the shipment of coal from the Tesla Coal Mine (Mosier and Williams 2002:31). In March of 1897 the first train load of Tesla coal arrived in Stockton, and was quickly purchased by local businesses (Mosier and Williams 2002:75). By 1900, Tesla was producing 70,500 tons of coal per year, and was the largest coal producer in California (Mosier and Williams 2002:31).

In 1901, John Treadwell erected a coal briquette factory in Stockton for Tesla coal (Mosier and Williams 2002:199). During the late 19th century, coal briquettes were popular in Europe, but it wasn't until the production of Tesla briquettes in April of 1901 that the United States began to take in interest in briquetting coal. It became the first commercially successful briquette plant in the United States and operated until the plant was destroyed by fire in 1905 (Mosier and

Williams 2002:205). The destruction of the briquette plant ended coal mining at Tesla. Clay, sand, and gravel were to replace coal as the main products by the coal company.

The birth of the Western Pacific Railway Company in 1902 also has a strong connection to the coal mining industry at Tesla. One of the two founders of the Tesla Coal Mine, John Treadwell, partnered with Walter J. Bartnett to implement the extension of the Alameda and San Joaquin railroad to the Oakland waterfront, thereby giving birth to the Western Pacific Railway Company (Mosier and Williams 2002:255). The Western Pacific Railway Company was incorporated on March 6, 1903, with Bartnett as President (Mosier and Williams 2002:256). Bartnett secretly struck a deal with George Gould of the Missouri Pacific Railway Company to turn the Western Pacific into a transcontinental railroad in 1909 (Mosier and Williams 2002:261). A large part of the revenue of the Western Pacific during the first 15 years or more came from transporting Tesla clay, sand, and gravel and their products to the San Francisco market (Public Utilities Commission 1915).

With the success of the Tesla Coal Mine, residential communities were established to house the company employees. The communities included bunkhouses named Treadwell Row, Jimtown, Frytown, Harrietville, Chinatown and Darktown. The community also contained a school district, hospital, company store, post office, saloon, hotel, and additional businesses (Mosier and Williams: 2002). At its peak in 1898, Tesla attained a diverse population of 1,200 people (Dan Mosier, 2009, pers. comm.). The Asian population, namely the Japanese and Chinese, numbered over 200, and they were segregated from the rest of the population (Mosier and Williams 2002:166). In 1908, a fire destroyed the Tesla hotel, saloon, bakery, ice-cream parlor, pumphouse, and butchershop, and took the life of a storekeeper (Mosier and Williams 2002:124).

The mining camp was abandoned with the closing of the mines in 1911 (Mosier and Williams 2002:305). The Tesla School District was annexed to another district in September 1913 (Mosier and Williams 2002:105). The mine buildings were razed by Sugurman Iron and Metal Company of San Francisco in 1914. The Tesla post office closed on 31 May 1915 (Mosier and Williams 2002:305). Local cattle ranchers acquired the Tesla property for $36,000 in October 1915 (Mosier and Williams 2002:305).

Clay and sand mining continued intermittently at Tesla by different firms until 1957. In 1923, the Ryan clay mine was opened on the summit just north of the old Tesla stage road and was worked until 1929. Bunkers, mine buildings, and an office were erected, but these have since been removed. Today, only white tailings pile of clay can be seen at the site. Over at Harrisville, a clay quarry was dug on the hillside on the south side of Tesla Road in 1927. In 1940, the Tesla Clay and Sand Company, operated by Earl and Lorin Isabell of Tracy, opened two sand adits and installed a crusher and screens, a wooden sand bunker, and sheds at Tesla. Small amounts of molding sand were shipped to local foundries as late as 1957. The sand bunker and a small shed are all that remains from the last mining activity at Tesla (Dan Mosier 2009, pers. comm.).

The Carnegie Brick and Pottery Company Ruins are located south of California Historical Landmark No. 740, Carnegie in Corral Hollow, San Joaquin County, California. Carnegie was a town populated by 350 people from 1902 to 1912 (Mosier and Williams: 2002:213). The town included a large hotel, bakery, laundry, saloon, slaughterhouse, school, two bunkhouses, and 17 homes. Carnegie was located four miles from the Tesla coal mine (Mosier and Williams 2002:213). Prior to the building of Carnegie, this site was known as the “Lime Kilns” for the aragonite veins that were mined on the hill south of Carnegie (Mosier and Williams 2002:209). In 1895, a small lime works was established to manufacture cement, which was used locally by

the San Francisco and San Joaquin Coal Mining Company. Remnants of the stone and brick kiln can still be seen near the lime tunnel. When clay mining commenced at Tesla in 1901, clay was first shipped by rail to the Stockton Pottery in Stockton (Mosier and Williams 2002:241).

The Stockton Pottery manufactured fancy bricks, sewer pipes, and artware until it was destroyed by fire in 1902. Rather than rebuild the Stockton plant, the coal company decided to build new plants closer to their clay mines at Tesla. In 1902, the San Francisco and San Joaquin Coal Mining Company erected brick kilns, drying sheds, a grinding, and pugmill plant and a building for the storage of machinery (Mosier and Williams 2002:213). The town of Carnegie was built around the brick and pottery plant. The Treadwell's were inspired to name the company and town Carnegie after the industrialist and philanthropist, Andrew Carnegie (Mosier and Williams 2002:213).

The Carnegie Brick and Pottery Company had a total of 45 kilns and 13 tall smokestacks, and the clay came from the Tesla Coal Mine (CA-OHP 1996). About 6 to 7 carloads of clay per day were sent to the plant by railroad from Tesla. Between the years 1902 to 1903 the company implemented additional structures such as brick kilns, brick drying sheds, smokestack chimneys, a large brick plant, a railroad spur line, and tunnel driers. In December 1903, Carnegie Brick and Pottery Company won a gold medal for the best fire and pressed brick at the California State Fair in Sacramento. Additionally, it won a blue ribbon for the best manufactured sewer pipe (Dan L. Mosier 2007, pers. comm.). The plant machinery was powered by a 450 horse-powered engine and produced 20,000 pressed, or face, bricks and 100,000 fire bricks per day.

In 1905, a terra cotta plant was added with a spur line for making architectural terra cotta (Mosier and Williams 2002:227). The brick and terra cotta works employed about 115 workers. Two miles west of the brick and terra cotta plants, the company erected a large sewer-pipe plant in 1903 on the Western Pacific line known as Walden or Pottery (Mosier and Williams 2002:246). This plant was equipped with eight round kilns that fed three tall chimneys, 8 large drying sheds, a pugmill, boilerhouse, and equipment plant. They produced 4-inch to 18-inch diameter pipes and shipped two carloads of sewer pipe per day. The sewer-pipe plant employed about 50 workers.

The company continued to grow in success until January of 1909. From this point on the plant experienced a series of incidences including, floods, boiler explosions and employee lay-offs, until finally being sold to Gladding, McBean & Company for $25,000 in February of 1916 (Mosier and Williams 2002:308). On 27 May 1917 the kilns, smokestacks and all the brick buildings were destroyed by dynamite by the United Wrecking Company at 3 p.m. In August of 1917 a fire completely destroyed the Graner Hotel and two large bunkhouses in the vicinity. By 1922 the Western Pacific, the last remaining feature of the Carnegie Brick and Pottery Company was removed (Dan L. Mosier 2007, pers. comm.). Present-day Corral Hollow Road is paved over the old Western Pacific railroad bed through most of Corral Hollow.

Resources near the Project Area

Four known sites associated to the vast prehistory and history mentioned above exist in the project area and include, CA-ALA-443, ASC-34-08-41 (Carnegie Lime Kiln and Quarry), ASC-34-08-65 (Kiln Canyon Trail), and ASC-34-08-64 (East Pottery Trail).

CA-ALA-443: This site was previously discovered and recorded during the completion of a cultural resource inventory for the Carnegie General Plan in 1979 (Hines and Reinoehl 1984). The site was reviewed in 1981 and subsequently excavated in 1984 (Hines and Reinoehl 1984;

Reinoehl 1984). Excavations at the site located one burial, one cremation, a possible hearth, and a work area within an extensive grayish midden. Artifacts indentified during excavations included: mortars, pestles, handstones, milling slab fragments, projectile point fragments, mineralized bone artifacts, one perforator, eight Olivella shell beads, two Haliotis pendants, and a Haliotis ornament (Hines and Reinoehl 1984; Reinoehl 1984:2–3). It was also noted that the site contained historic-era artifacts as well as an earthen dam and reservoir constructed in 1962 (Reinoehl 1984:7). At the time of excavation it was noted that the site had sustained damage from OHV traffic and road grading. Mitigation measures for these effects were implemented and included installation of 4 in. of clean fill material, planting of trees and shrubs, and minimal grading of the Franciscan Loop Trail on the site (Reinoehl 1984:6–7).

This site was updated in 2008 by archaeologists at the Sonoma State University, Anthropological Studies Center. This survey identified two artifacts, a pestle fragment and a small chert fragment in the drainage. The modern earthen dam and reservoir were also noted.

ASC-34-08-41 (Carnegie Lime Kiln and Quarry): This historic-era resource represents a lime quarrying and processing operation associated with the Carnegie Brick and Pottery Works (CA-SJO-331) that was operating in the Corral Hollow Canyon between 1901 and 1911.

This site was first recorded for CDPR by Kelly, McAleer, and Hines in 1979 and was updated by J. Schulz and G. Reinoehl in 1985. However, the site has not been assigned a trinomial or primary number. In 2009 this site was recorded by Sonoma State University Anthropological Studies Center archaeologists and has been sent to the appropriate California Information Center for permanent trinomial and primary numbers. This historic-era site includes at least three quarry areas, access roads, a brick lime kiln, dry-laid rock retaining walls, and an adit.

This site has been divided into three loci: a large quarry area at the southern end of the canyon, the main kiln area at the center, and a smaller quarry area at the northern end.

ASC-34-08-65 (Kiln Canyon Trail): This resource is a historic-era dirt road that connected the Carnegie Brick and Pottery Works (CA CA-SJO-331) to the Carnegie Lime Kiln and Quarry (ASC-34-08-41). The road is part of the modern Kiln Canyon Trail alignment which continues beyond the original road segment. This road was used to transport processed lime from the kiln to the Carnegie Brick and Pottery Works and the railroad between 1894 and 1901 when gas kilns were built in Corral Hollow. After 1901, this road was used to transport unprocessed lime to the Corral Hollow kilns until 1904 when lime processing in the area ended (Mosier and Williams 2002: 209).

In 2010 this site was recorded by Sonoma State University, Anthropological Studies Center archaeologists and has been sent to the appropriate California Information Center for permanent trinomial and primary numbers.

ASC-34-08-64 (East Pottery Trail): This resource is a historic-era dirt road/trail. The resource is depicted on the 1907 USGS and the 1942 USACE topographic maps of the area as beginning on the east side of Pottery and extending south, up the ridgeline, out of Corral Hollow. On the 1907 map it is shown as about 0.4 mile long; on the 1942 map, this same section is shown as a dirt road in a slightly different alignment to the east, and has been extended as a trail upslope 1.1 miles to a point on the ridgeline about 0.25 mile outside and south of the SVRA. Both alignments are recorded under the ASC-34-08-64 designation. The trail connected Carnegie to upland areas south of the current park boundaries. Sections of the trail are no longer in use, and are visible only as about 1 ft.-deep cuts, roughly 4 ft. wide, with well-defined downslope berms suggesting that they were cut and cleared rather than simply being relict OHV trails or

cattle trails that have been abandoned. In other areas, the trail appears to have been incorporated into dirt access roads or OHV trails. The abandoned portions are covered in grasses.

In 2010 this site was recorded by archaeologists at the Sonoma State University, Anthropological Studies Center and has been sent to the appropriate California Information Center for permanent trinomial and primary numbers.

Would the project:

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

Less than Significant Impact. Two stream crossing projects are to occur near and within ASC-34-08-41 (Carnegie Lime Kiln and Quarry). This resource will not be impacted by this project. CDPR, OHV Division Associate State Archaeologists, Alicia Perez and Kelly Long, visited this project area along with Clint Elsholz, the Carnegie SVRA Environmental Scientist, and Victoria Harris, on behalf of TRA Environmental Sciences, Inc., and confirmed this project will not impact the resources. The project includes maintaining existing culverts near the resource.

The rehabilitation of ASC-34-08-64 (East Pottery Trail) will occur as part of this project. One of the primary objectives of the access roads and trails inventory conducted for the CHWA was to identify past, present, and future sources of erosion from the road and trail reaches, stream crossings, and associated gullies. CDPR, OHV Division Associate State Archaeologists, Alicia Perez and Kelly Long, visited this project area along with Clint Elsholz, the Carnegie SVRA Environmental Scientist, and Victoria Harris, on behalf of TRA Environmental Sciences, Inc., and confirmed this project will not impact this resource. This project includes rehabilitating an historic-era road that has been previously modified by past trail maintenance projects.

The rehabilitation of ASC-34-08-65 (Kiln Canyon Trail), as well as the maintenance of two existing stream culverts located along this resource, will occur as part of this project. Further details about this rehabilitation process can be found in the attached document prepared by TRA Environmental Sciences, Inc., Carnegie SVRA Roads and Sediment Basin Rehabilitation Projects, Initial Study/Negative Declaration (TRA 2010: 14). CDPR, OHV Division Associate State Archaeologists, Alicia Perez and Kelly Long, visited this project area along with Clint Elsholz, the Carnegie SVRA Environmental Scientist, and Victoria Harris, on behalf of TRA Environmental Sciences, Inc., and confirmed this project will not impact this resource. This project includes rehabilitating an historic-era road and maintaining an existing culvert, both of which have been previously modified during prior maintenance projects.

The project that is to occur near and within ASC-34-08-41 (Carnegie Lime Kiln and Quarry) includes the maintenance of two pre-existing culverts. This project will not impact the resource.

Although a formal determination of eligibility has not been submitted to OHP, ASC-34-08-65 (Kiln Canyon Trail) and ASC-34-08-64 (East Pottery Trail) are most likely not eligible for listing on either the NRHP or CRHR under the context provided here. Since the trails were not evaluated as part of a historic landscape district, it is possible, though unlikely, that they are eligible as contributors to a historic landscape. Since this project includes rehabilitating two historic-era roads that have been modified during previous trail and culvert maintenance projects, this rehabilitation project will not adversely impact them. The trails will retain their

integrity of location, setting, feeling and association (they have already lost integrity of design with the various upgrades).

All culturally sensitive areas will be avoided throughout the project. This project has been designed so that the unearthing a historic resource deposit is unlikely; however, a research design will be developed in the event unanticipated buried historic deposits are discovered during the project. An archaeological monitor will also be present at the project site during ground disturbing activities that take place in the higher elevations of the project area; these are areas that are more likely to contain buried historic deposits.

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

Less than Significant Impact. One stream crossing project will occur near CA-ALA-443. This resource will not be impacted by this project. According to CHWA, stream crossings represent the point on a trail or roadway that intersects a natural drainage path. The high velocities associated with concentrated flow paths or runoff as it flows through a crossing can cause significant erosion. To mitigate these effects, the CHWA has indicated several rehabilitation measures, all of which can be found in the attached document prepared by TRA Environmental Sciences, Inc., Carnegie SVRA Roads and Sediment Basin Rehabilitation Projects, Initial Study/Negative Declaration (TRA 2010: 14). CDPR, OHV Division Associate State Archaeologists, Alicia Perez and Kelly Long, visited this project area along with Clint Elsholz, the Carnegie SVRA Environmental Scientist, and Victoria Harris, on behalf of TRA Environmental Sciences, Inc., and confirmed this project will not impact the resource. This project includes maintaining existing culverts near the resource, and the project boundary is down slope and outside of the known site boundary.

All culturally sensitive areas will be avoided throughout the project. This project has been designed so that the unearthing an archaeological deposit is unlikely; however, a research design will be developed in the event unanticipated buried archaeological deposits are discovered during the project. An archaeological monitor will also be present at the project site during ground disturbing activities that take place in the higher elevations of the project area; these are areas that are more likely to contain buried deposits.

The project is occurring outside of the CA-ALA-443 site boundary and will not impact the site.

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

Less than Significant Impact. All of the resources within or in proximity to the project areas have been thoroughly documented and all paleontological resources would be protected from project disturbance in accordance with the P.R.C. requirements that CDPR must undertake when a cultural resource is known or suspected from a project site. There are no unique geologic features in the project areas.

d) Disturb any human remains, including those interred outside of formal cemeteries?

No Impact. No human remains were encountered during the surveys and research undertaken by CDPR Archaeologists or by Archaeologists at Sonoma State University. Should human remains be encountered during project implementation, work activities would stop at the discovery site and the proper authorities would be notified.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.6 GEOLOGY AND SOILS -- Would the project:				
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.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Environmental Setting

Geological Hazards

The background information on geological hazards at the Carnegie SVRA presented in this is section is taken from the CHWA and was adapted from the Recirculated Draft EIR (HDR, 2004). The information was originally obtained from Cotton, (1972), the California Division of Mines and Geology (1982a, 1982b, 1982c), the California Department of Conservation (1998), and the Association of Bay Area Governments (1983).

Earthquake Faults

The Greenville fault is the only potentially active earthquake fault in the immediate proximity of the SVRA. The fault passes along the western perimeter of the site, crossing the SVRA's western-most boundary and is capable of generating a 6.9-magnitude earthquake. Since the fault only crosses a small portion of the SVRA, the probability of a surface fault rupture occurring within the SVRA is relatively low.

Other active faults in the region include the Hayward and Calaveras faults. These faults are capable of producing "weak" to "very strong" maximum shaking intensities at the SVRA (HDR, 2004). The Tesla fault is an inactive earthquake fault that passes through the middle of the SVRA in an east to west orientation.

Landslides

The areas south of the Tesla fault consist of the Franciscan formation mélange, which is a sheared mixture predominately siltstone and shales. The mixture also includes meta-greywacke sandstone, greenstone, chert, serpentine, and metamorphic rock. The Franciscan formation is generally weak with slope stability ranging from very low to moderate (Cotton, 1972). According to Rogers (1966), areas north of the Tesla fault consist of marine and non-marine sedimentary rocks.

Cotton has identified four large landslides within the southern portion of the SVRA. The slides are thought to be ancient and deep-seated and will probably not be affected by park activities. Nilsen also conducted a landslide analysis in 1972 using aerial photograph interpretation. Results from Nilsen's analysis indicated that approximately one-third of the SVRA consisted of small to large landslides. Nilsen confirmed that the larger slides were deep-seated and would probably not be affected by park activities. However, the smaller slides could potentially be recent, shallow failures that could be reactivated through changes in the watershed hydrology, stream erosion, or earthquake-induced ground shaking (Nilsen, 1972).

Discussion:

Would the project result in:

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.

No Impact. The projects are not located within a mapped Alquist-Priolo Earthquake Fault Zone. The closest active fault to the project sites is the Greenville fault zone (Arroyo Mocho section) approximately 2 miles to the west. Therefore, fault rupture hazard is not considered to be an impact.

ii) Strong seismic ground shaking?

Less than Significant Impact. Strong seismic ground shaking resulting from movement on nearby active faults is anticipated within the vicinity of the projects. However, the projects do not include any proposed habitable structures, therefore strong seismic ground shaking is considered a less than significant impact. Any features to be used to protect against erosion as well as sediment basin dam structures would be designed to withstand strong seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction?

No Impact. Seismic-related ground failure including liquefaction is not anticipated at the project sites given the subsurface conditions. Additionally, the projects do not include any proposed habitable structures, therefore, strong seismic ground shaking is not considered an impact. Any features to be used to protect against erosion as well as sediment basin dam structures would be designed to withstand strong seismic ground shaking.

iv) Landslides?

No Impact. The project's focus is on slope stabilization and erosion control. It is not anticipated to result in substantial soil erosion or loss of topsoil. The sediment basin rehabilitation work would take place on level slopes and would not trigger landslide movement. This is not considered to be an impact.

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

No Impact. The purpose of the projects is to reduce soil erosion that results in sedimentation of Corral Hollow Creek. The projects will significantly reduce soil erosion along the roads and trails in the SVRA and would fix low water crossings of Corral Hollow Creek. The sediment basin rehabilitation work is intended to improve the holding capacity of the basins and thus reduce sedimentation into the creek. Therefore, soil erosion and loss of topsoil is not considered to be an impact. Furthermore, the projects incorporate erosion control measures in their design (refer to Section 2.9 in the Project Description).

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

No Impact. The project elements would not occur on unstable soils or slopes..

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?

No Impact. The project sites do not contain any expansive soils.

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

No Impact. Not applicable to this project.

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

Discussion:

Would the project:

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

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

No Impact. (Responses a and b) The projects would result in temporary diesel and gasoline emissions during times when the heavy equipment is in use. The expected period of use is 3 to 6 months. The proposed projects would not contribute to urban growth or introduce new sources of air pollutants or green house gas emissions into the air basin. The proposed projects would not conflict with the applicable air quality plan in effect for this area (Bay Area Air Quality Management District 2009).

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.8 HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
areas or where residences are intermixed with wildlands?				

Discussion:

Would the project:

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

No Impact. A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. Chemical and physical properties such as toxicity, ignitability, corrosivity, and reactivity, cause a substance to be considered hazardous. These properties are defined in the California Code of Regulations (CCR), Title 22, Sections 66261.20-66261.24. A "hazardous waste" is any hazardous material that is discarded, abandoned, or to be recycled. The criteria that render a material hazardous also make a waste hazardous (California Health and Safety Code, Section 25117). According to this definition, fuels, motor oil, and lubricants in use at a typical construction site and airborne lead built up along roadways could be considered hazardous.

The project sites do not contain any hazardous materials nor are any hazardous material planned to be brought to the project sites. Therefore, transport, use, or disposal of hazardous materials is not considered to be an impact.

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?

No Impact. The project sites do not contain any hazardous materials. Therefore release of hazardous materials into the environment is not considered an impact.

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

No Impact. The project sites do not contain any hazardous materials nor are any aspects of project implementation expected to emit hazardous emissions or wastes. There are no schools within one-quarter mile of the project sites.

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

No Impact. The project areas are not located on the list of hazardous materials sites pursuant to Government Code Section 65962.5. The sites are not anticipated to contain any

hazardous materials and are therefore not considered to pose an impact related to hazardous materials.

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

No Impact. The project sites are not located within an area that has an airport land use plan. The nearest airport is the Tracy Airport more than five miles away.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. There are no private airstrips near the project areas. The nearest airport is the Tracy Airport more than five miles away.

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

No Impact. Implementation of the roads and trails repair work and installation of the water crossings would facilitate the use of the roads by emergency personnel as it would stabilize the roads and make them more durable. The projects would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

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?

No Impact. The project areas are in remote locations and do not involve the construction of structures that would be susceptible to wildfires.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.9 HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
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 which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
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 which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
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?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
	☐	☐	☐	☒
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?			
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Environmental Setting

The project area contains a matrix of ephemeral drainages and swales in the Corral Hollow Creek watershed. The central drainage of the area is Corral Hollow Creek, an intermittent stream that flows east through Corral Hollow Valley into the San Joaquin Valley. Corral Hollow Creek is a broad complex of alluvial fans and depositional features composed of well-drained sediments. Its multiple reaches are braided and meander from its headwaters. Its various tributaries are ephemeral drainages and swales that emanate from steep, narrow canyons through the inner coastal foothills. During rain events, these canyons produce flashy, high intensity flow that is dissipated by the alluvial plain of Corral Hollow Creek.

The Corral Hollow watershed is classified as dendritic. Small headwater tributaries converge in the upper portions of the watershed to form the main stem of Corral Hollow Creek. Additional tributaries contribute to the stream as it flows towards the outlet of the watershed study area.

<u>Historical Influences on the Stream Geomorphology of Corral Hollow Creek</u>

The arrival of domesticated sheep and cattle over 150 years ago significantly altered the vegetative composition and stability of the soil in the Corral Hollow. The transition of native perennial grassland to non-native annuals adversely impacted wildlife food supplies and soil infiltration capacities. Due to their shallow root depths, non-native grasses were poorly suited for stabilizing steep slopes and stream banks. Furthermore, the lack of perennial grasses lead to an increase in exposed soils prior to the rainy season. Soil compaction from repetitive hoof action and raindrop impact further intensified the problem by increasing runoff and peak flows. Mules and other labor animals were kept in corrals next to the stream channel, thus concentrating grazing activities within the riparian corridor.

Mining and industrial activities that occurred throughout the valley of Corral Hollow have greatly influenced the geomorphology of Corral Hollow Creek. Levees, railroads, roads, building foundations, and tailing piles often encroached into the floodplain and even the stream channel. These features physically blocked and deflected the stream from its natural flow path, thus altering the natural sinuosity, length, and planform of Corral Hollow Creek.

More recent activities, such as off-highway vehicle use, also have an impact on stream characteristics. Volunteer trails and improperly constructed access roads have led to drainage alterations and gully formation. The CHWA provides a detailed assessment of the current geomorphic, hydraulic, and water quality characteristics of Corral Hollow Creek and the

associated hydrology of the watershed. Numerous field investigations, monitoring studies, modeling efforts, and literature reviews were conducted for the CHWA. The findings and information presented in the CHWA guided the interdisciplinary team in developing recommendations to ensure the lands managed by the OHMVRD will meet the water quality criterion set by the NPDES and Clean Water Act, continue to provide recreational opportunities, preserve the vast natural and cultural resources and provide additional opportunities for interpretation, while rehabilitating Corral Hollow Creek to a proper functioning condition. The projects that are the subject of this Initial Study were recommended in the CHWA to reduce erosion and improve water quality.

Discussion:

Would the project:

a) Violate any water quality standards or waste discharge requirements?

No Impact. The projects are aimed at improving water quality by stabilizing and repairing erosion problems along the roads and trails in the SVRA. This will result in decreasing sediment to Corral Hollow Creek. The sediment basin rehabilitation work is meant to improve the holding capacity of the basins in order to maintain the ability to capture silt before it flows downstream to Corral Hollow Creek. This process is part of Clean Water Act compliance for the SVRA.

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

No Impact. The projects do not impact groundwater recharge and do not include groundwater pumping wells.

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 which would result in substantial erosion or siltation on- or off-site?

Less than Significant Impact. The projects would modify some of the existing drainage patterns at the SVRA, but such patterns have been targeted as causing erosion and gullying. The repair work will improve drainage off of the roads and trails and thus substantially reduce on and off-site erosion and siltation. The sediment basin rehabilitation project would increase the holding capacity of the basins resulting in better silt management and improve the capacity to capture sediment and prevent it from flowing into Corral Hollow Creek. This process is part of Clean Water Act compliance for the SVRA.

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 which would result in flooding on- or off-site

No Impact. The projects would not change the hydrology (volume or flow rates) within or downstream of the project boundaries and would not result in flooding. The projects do not

include any physical structures (buildings, pads, parking lots, etc.) that typically increase runoff from a site. The projects do not increase the imperviousness of the site.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No Impact. Repairing the roads and trails are proposed to improve water quality and does not change the hydrology of the watershed. The improvement of the silt holding capacity of the sedimentation basins are proposed to control storm water runoff and improve water quality.

f) Otherwise substantially degrade water quality?

No Impact. Repairing the roads and trails are proposed to improve water quality and does not change the hydrology of the watershed. The improvement of the silt holding capacity of the sedimentation basins are proposed to control storm water runoff and improve water quality.

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?

No Impact. The projects do not include any structures (houses, etc.).

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. The projects do not include any structures (houses, etc.).

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?

No Impact. The projects do not include any structures (houses, etc.), dams, or levees.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. The projects do not include a body of water that could be subject to a seiche, is not located in a coastal environment or tsunami hazard zone, and do not include features that could influence, restrict, or enhance natural mudflow processes.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.10 LAND USE AND PLANNING -- Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Environmental Setting

Discussion:

Would the project:

a) Physically divide an established community?

No Impact. There is no established community within the project areas; however, there are single family residences that front Tesla Road. The projects would not have an impact on the existing residences nor would they divide an established community.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. None of the proposed work would change the nature of any land use within the area. The roads, trails and low water crossing repairs and sediment basin rehabilitation projects are needed to maintain good water quality. None of these projects conflict with a land use policy. Impacts to water and biological resources require authorization from regulating agencies, including the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. These authorizations will guarantee that these projects are in compliance with regulations that protect the environment.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The project sites are not located in an area covered by a habitat conservation plan or natural community conservation plan.

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

Discussion:

Would the project:

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

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

No Impact. (Responses a and b) No important mineral resources would be removed from the project area, nor would any mineral resources be affected by the projects.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.12 NOISE -- Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Environmental Setting

Noise Characteristics

<u>The Decibel Scale (dB)</u>

Noise is measured on the logarithmic decibel scale (dB), usually with a frequency sensitivity that matches the human ear, called "A-weighting." Thus, most environmental measurements are reported in dBA, meaning decibels on the A-scale. The logarithmic scale means that a sound level reported as 60 dBA has 10 times the sound energy as a sound with a level of 50 dBA.

Human hearing matches the logarithmic A-weighted scale, so that a sound of 60 dBA is perceived as twice as loud as a sound of 50 dBA. In a complex noise environment such as

along a busy street, a noise increase of less than 3 dB is usually not perceptible, and an increase of 5 dB is usually perceptible. Normal speech is in the range from 50 to 65 dBA, with levels rising as the distance between speakers increases or as background noise level rises, and daytime activities such as using a telephone, watching television, and conversation fall in the 50 to 65 dBA range. Therefore, as environmental noise exceeds 50 dBA, it becomes intrusive and above 65 dBA, noise becomes excessive. Nighttime activities, including sleep, are more sensitive to noise and are considered affected over a range of 40 to 55 dBA.

Outdoor noise is attenuated by the building envelope so that sound levels inside a residence are from 10 to 20 dB less than outside, depending mainly on whether windows are open for ventilation or not. Examples of typical outdoor noise levels are presented in Table 6.

Table 6
Typical Outdoor Noise Levels

Common noise levels	**Noise level (dBA)**
Jet flyover at 1000 feet	105
Gas lawn mower at 3 feet	95
Roadway in commercial area at 50 feet (area of rough pavement)	75-80
Quiet urban daytime	50
Quiet urban nighttime	40
Quiet suburban nighttime	35

Source: CalTrans Technical Analysis Notes, March 1991.

Sound Levels

Noise exposure over a full 24-hour day can be described by the DNL (day/night level), which is the average sound level with a 10dB “penalty” is added to noise levels occurring during the nine nighttime hours from 10 p.m. to 7 a.m. The penalty means that a nighttime sound level of 45 dB is counted as 45 + 10 = 55 dB in calculating the average to reflect the lower sensitivity threshold during nighttime.

Community Noise Equivalent Level (CNEL) is similar to the DNL except that it includes an additional 5 dBA penalty for noise events that occur during the evening (7 p.m. to 10 p.m.) time period. Local governments use either DNL or CNEL to set policy for community noise impacts.

It is often necessary to characterize sound levels over shorter time periods. The equivalent noise level (Leq) is the average of the varying sound energy recorded over a given time period. Leq (h) represents the time-weighted average for a 60-minute (hourly) period. Recording a series of Leq shows how sound varies of a period of time and helps identify increases in intrusive noise sources. Other noise descriptors of variable sound are values such as L01, L10, L50 and L90 – decibel levels that are exceeded 1 percent, 10 percent, 50 percent and 90 percent of the time, respectively. The L01 or L10 would show how relatively brief, but loud noise affects the average; L90 reflects the background noise level.

Standards of Significance

The definition of a “substantial increase in noise” as defined in the CEQA Checklist depends on circumstances. Unless noise has a distinct quality such as amplified speech, an increase of 3 to 5 dB is needed before a typical listener is able to discern an increase. Thus 3 dB is a conservative standard of significance for sound level increase above ambient noise levels. In a

complex noise environment such as along a street, a noise increase of 5 dB is usually considered perceptible.

Sensitive Receptors

Sensitive receptors are facilities that house or attract people who are especially sensitive to the effects of the noise environment. Hospitals, schools, convalescent facilities, parks, and residential areas are examples of sensitive receptors.

Discussion:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant Impact. Noise levels would increase during implementation of the projects at the specific project sites due the use of heavy equipment. However, noise from heavy equipment would be limited to the hours between 7:00 a.m. and 8:00 p.m. Private property and homes are interspersed on private property, mostly along Tesla Road. These homes would not be subject to increased noise from construction equipment use as the work sites are located in areas well away from the existing residences.

b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?

Less than Significant Impact. Localized ground vibrations may occur during implementation of the projects at the specific project sites due the use of construction equipment. However, ground vibrations from construction equipment would be limited to the hours between 7:00 a.m. and 8:00 p.m. Private property and homes are interspersed on private property, mostly along Tesla Road. These homes would not be subject to ground vibrations from heavy equipment use as the work sites are located well away from the existing residences.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No Impact. The projects involve the one-time stabilization and repair of roads and trails within the SVRA, and improvements to sediment basins and installation of low water crossings over Corral Hollow Creek. The project work would take place in a 3 to 6 month period, and after that time, the construction equipment used to conduct the work would be removed and no other construction related noise would be generated at the site.

d) A substantial temporary or periodic increase in ambient noise levels in the project above levels existing without the project?

No Impact. The projects would not create a substantial temporary or periodic increase in ambient noise levels (refer to responses to a. and c. above).

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

No Impact. The nearest airport to the project site is the Tracy Airport, located more than five miles from the nearest SVRA boundary. The projects are not located within the 60 dBA CNEL zone of the airport and do not involve a change in recreational or other human use of the area, and implementation of the projects would not affect or result in exposure to excessive noise levels from an airport.

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?

No Impact. The proposed projects are not within the vicinity of a private airstrip.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.13 POPULATION AND HOUSING--				
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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion:

Would the project:

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)?

No Impact. The projects would not induce population growth as they only involve road and trail repairs, installing low water crossings, erosion control work, and sediment basin improvements. These activities do not require services that would trigger population growth.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The projects would not displace existing houses that occur along Tesla Road.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. There are no people living in the immediate vicinity of the projects. Therefore there would be no displacement of people requiring the construction of replacement housing elsewhere.

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

Environmental Setting

Discussion:

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

i) Fire protection?

No Impact. The projects would not increase the need for fire protection services or create an adverse impact on fire protection services.

ii) Police protection?

No Impact. The projects would not increase the need for police protection services or create an adverse impact on police protection services.

iii) Schools?

No Impact. The projects would not affect the number of students served by local schools, nor bring in new residents requiring the construction of additional schools.

iv) Parks?

No Impact. The projects would not result in an increased number of residents or visitors in the area using community parks. It is not expected that the projects would result in increased visitorship at the SVRA.

v) Other public facilities?

No Impact. No other public facilities would be affected by the projects.

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

Discussion:

Would the project:

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

No Impact. The projects are meant to prevent the physical deterioration of the SVRA. They would not increase the visitor use of the SVRA, or nearby parks in the cities of Livermore or Tracy such that acceleration of deterioration of the facilities would occur.

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

No Impact. The projects would not include nor would they facilitate any new recreational facilities or activities.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.16 TRANSPORTATION/TRAFFIC -- Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	☒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

Environmental Setting

Discussion:

Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

No Impact. The project would require a site manager, four equipment operators, and four laborers at a given time. The level of additional traffic on local roadways from these 9 workers is considered insignificant, regardless of the existing loads and capacities of the roadways.

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

No Impact. The projects would not affect local roads or highways or conflict with an applicable congestion management program including level of service standards, travel demand management measures, or other standards. The projects are short term and there are no existing traffic congestion problems in the vicinity.

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?

No Impact. The projects are not within regulated air space and would not affect air traffic patterns.

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

No Impact. The projects are proposed to reduce travel hazards and erosion from existing access roads and OHV trails. The work done would make the roads more stable and more durable. The proposed projects do not involve any changes in roadway design features and would not affect the amount or nature of use on roads or highways. The projects would not cause any hazardous traffic or transportation conditions. The sedimentation basin improvements would not change existing roads.

e) Result in inadequate emergency access?

No Impact. The roads, trails, and low water crossing rehabilitation measures would improve access within the SVRA thereby increasing emergency access within the area. The sedimentation basin rehabilitation measures have no bearing on access.

f) Result in inadequate parking capacity?

No Impact. Parking is necessary for work crews, but otherwise the projects do not generate a long-term need for parking capacity. There is ample parking available for crews working at the SVRA on the rehabilitation projects.

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

No Impact. The proposed projects would not generate demand for, conflict with, nor decrease the performance of any adopted alternative transportation polices, plans, or programs.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.17 UTILITIES AND SERVICE SYSTEMS -- Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion:

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. There are no uses proposed that would require a substantial increase in wastewater treatment, or that would result in an exceedance of waste water treatment

requirements. The only wastewater use relates to the few workers needed for the projects, and some of these workers are already present at the site as park employees. There are sufficient sanitation facilities in the work areas to support the workers.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The projects would not require construction of new or expanded water or wastewater treatment facilities. The project has no wastewater disposal needs. The few workers used would have access to existing toilets and wash up facilities at the SVRA.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The sedimentation basin rehabilitation measures are needed to improve the holding capacity of the storm water control facilities, the environmental effects of which are the subject of this Initial Study.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. No new water supplies or entitlements would be needed to complete the projects, because there would be no change of existing water use associated with the projects.

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

No Impact. The projects do not involve construction of expanded facilities that would increase wastewater quantities.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

No Impact. The projects have no solid waste disposal needs. Workers would have access to existing waste disposal facilities at the SVRA.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. The projects have no solid waste disposal needs and thus would not violate any federal, state, or local statutes or regulations related to solid waste.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.18 MANDATORY FINDINGS OF SIGNIFICANCE --				
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, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? (Cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion:

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, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant Impact with Mitigation. All of the projects would employ best management practices required under the CDPR public resources code during implementation to preserve the quality of the environment and sensitive habitats and species and important examples of the major periods of California history or prehistory. Mitigation measures (BIO-1 through BIO-6) are recommended to protect special status plants and animals from significant harm. These actions, combined with the BMPs, would prevent substantial degradation of the environment, loss of species below self sustaining levels, and elimination of important examples of California History or prehistory.

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

Less than Significant Impact. The projects do not propose new uses at the project site and all impacts to disturbed habitats would be minimized and mitigated. Impacts related to climate change are not anticipated as the facilities are not expanding or resulting in increased visitation at the SVRA. The projects do not propose new housing or new permanent sources of air pollutant emissions. The projects do not result in negative cumulative impacts when considered alone or in combination with other local projects.

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

Less than Significant Impact. The projects are all related to improving water quality at the SVRA through the implementation of erosion and sediment control measures. Avoidance and measures are included in all aspects of the project that will prevent significant environmental effects. No substantial unavoidable adverse effects on human beings and on the environment, either direct or indirect, have been identified in this Initial Study.

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CHAPTER 5 REPORT PREPARATION

TRA Environmental Sciences, Inc.
545 Middlefield Road, Suite 200
Menlo Park, CA 94025
650 327-0429
www.traenviro.com

Senior Project Manager: Victoria Harris
Report Preparation: Victoria Harris, Sara Jones, Tay Peterson
Graphics: Sandy Ho, Sara Jones

California Department of Parks and Recreation
Off-Highway Motor Vehicle Recreation Division
Twin Cities District
Carnegie State Vehicle Recreation Area
(925) 455-7873 (Office)

Jennifer Buckingham Garcia, Twin Cities District Services Manager
Clint Elsholz, Environmental Scientist
Alicia Perez, State Park Archaeologist
Kelly Long, State Park Archaeologist