

**INITIAL STUDY /
MITIGATED NEGATIVE DECLARATION**

Public Draft

For

**Solano Land Trust and Ron and Ralph Azevedo
Application A030949 to Appropriate Water by Permit**

Lynch Canyon Reservoir



Photo credit: Lynch Canyon Reservoir courtesy of Solano Land Trust

Prepared for
Division of Water Rights
State Water Resources Control Board

Prepared by:
Stillwater Sciences

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October 2020

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**STATE WATER RESOURCES CONTROL BOARD
DIVISION OF WATER RIGHTS
P.O. BOX 2000
SACRAMENTO, CA 95812-2000**

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This report (study, brochure, poster, etc.) is funded, in part, with qualified outer continental shelf oil and gas revenues by the Coastal Impact Assistance Program, Bureau of Ocean Energy Management, Regulation, and Enforcement, U.S. Department of the Interior.

BACKGROUND

Project Title:

Application A030949 to Appropriate Water by Permit - Lynch Canyon Reservoir

Application Number:

A030949

Applicants:

Solano Land Trust, 700 Main Street, Suite 210, Suisun City, CA 94585

Ron and Ralph Azevedo, 180 South Kelly Road, American Canyon, CA 94503

Applicants' Contact Person:

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General Plan Designation:

Agriculture

Zoning:

Exclusive Agriculture

1. INTRODUCTION

On May 5, 1999, water right application A030949 to appropriate water by permit (Proposed Project) was filed with the State Water Resources Control Board (State Water Board), Division of Water Rights (Division). The application is currently owned by the Solano Land Trust, Ron Azevedo, and Ralph Azevedo (collectively, the Applicants). The application requests a permit to divert up to 47 acre-feet (af) of water per year to storage within an existing, onstream reservoir (Lynch Canyon Reservoir) located on an unnamed stream known locally as the North Fork of Lynch Canyon Creek. This water source is tributary to an unnamed stream locally referred to as Red Top Creek or American Canyon Creek, thence Cordelia Slough, thence Suisun Bay in the County of Solano (Figure 1). The implementation of the Proposed Project would involve a three-foot reduction in the elevation of the existing reservoir spillway and authorize the diversion and use of water in the reservoir. Water stored in the onstream reservoir would be used for stock watering, fish and wildlife preservation and enhancement, and recreation.

The North Fork of Lynch Canyon Creek is located within the American Canyon-Frontal Suisun Bay Estuaries watershed, approximately 2.5 miles southwest of the intersection of Interstate 80 and California State Route 12 (Figure 1). The Proposed Project area is located within Section 16 of Township 4 North, Range 3 West of the Cordelia, California USGS 7.5-minute topographic quadrangle. Elevations in the Proposed Project area range from 90–275 meters (m) [300–900 feet (ft)] above mean sea level. A property line runs directly through the center of Lynch Canyon Reservoir, with the western portion of the reservoir being located within Lynch Canyon Open Space property owned by the Solano Land Trust (SLT), and the eastern portion owned by Ron and Ralph Azevedo. The Proposed Project area includes Lynch Canyon Reservoir, its associated dam and spillway, North Fork of Lynch Canyon Creek, and riparian habitat downstream of the dam.

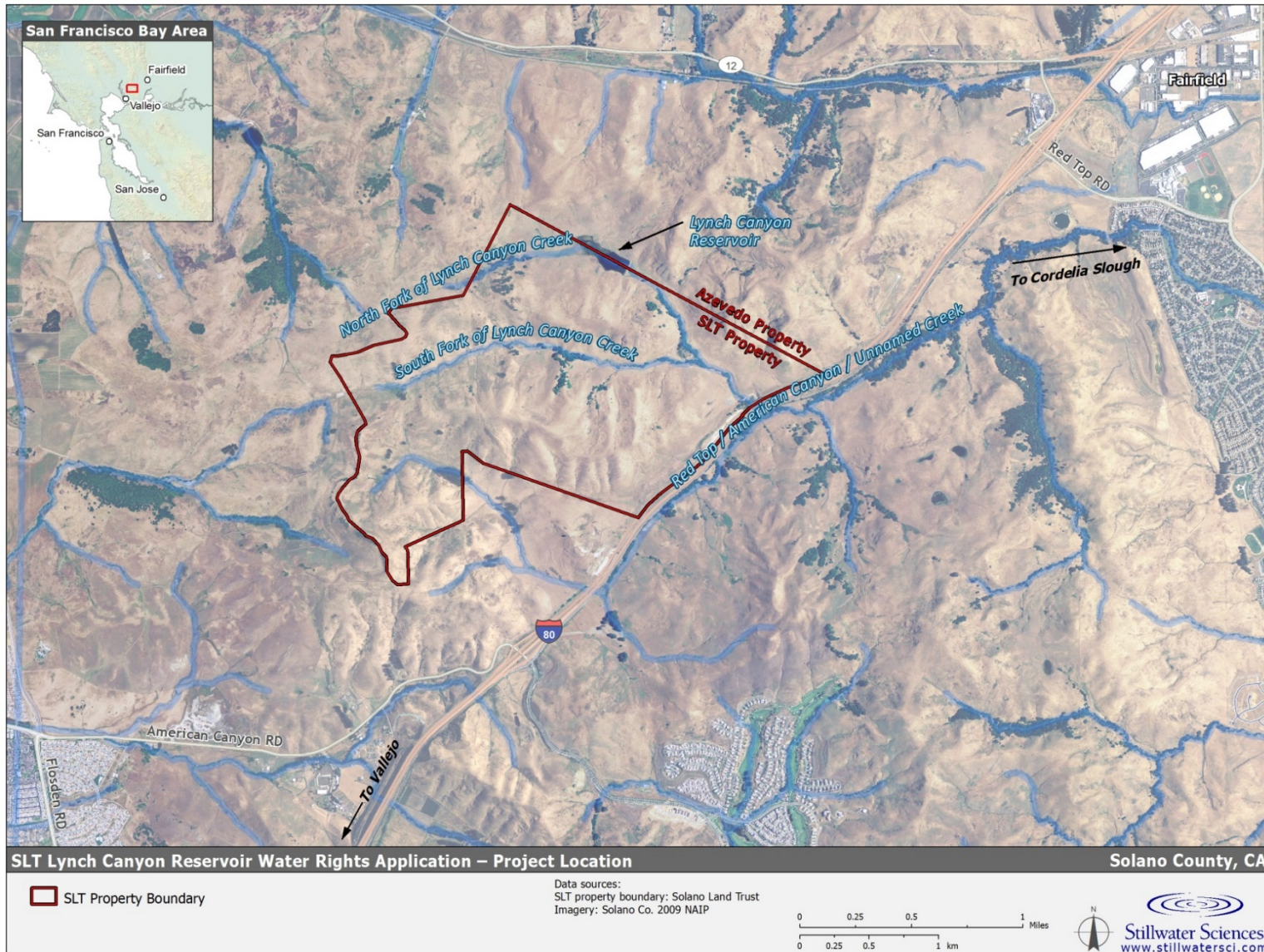


Figure 1. Lynch Canyon Reservoir Water Right Application - Project Location. The drainage area for the North Fork of Lynch Canyon Creek is located upstream of Lynch Canyon Reservoir and along the Solano Land Trust and Azevedo property boundary.

1.1 Project Description

The North Fork of Lynch Canyon Creek is currently dammed to form an unpermitted 79-af capacity reservoir. The Applicants propose to acquire the necessary water right for a seasonal diversion at the dam and to lower the spillway structure at the dam (Figure 2). The Applicants propose to lower the Lynch Canyon Reservoir spillway elevation from 5.7 m (18.8 ft) to 4.8 m (15.8 ft) (relative to the base of the dam, which is at 80 feet elevation relative to mean sea level, see Figure 4a), reducing the surface area of the Lynch Canyon Reservoir from 5.1 hectares (ha) to 3.3 ha [12.6 acres (ac) to 8.1 ac], and reducing reservoir capacity from 79 af to 47 af.



Figure 2. Lynch Canyon Dam spillway.

The Proposed Project actions include seasonal water diversion, storage, water use, construction of the lowered spillway, installation of a water release siphon, and emergency spillway repairs. Active open-range, low-density livestock grazing would continue year-round as part of the Proposed Project, including the use of exclusion fencing for riparian areas, oak groves, and emergent wetlands. More specifically, the Proposed Project includes the following components:

1. Seasonal diversion (October 1 to June 1) of up to 47 af of water from the North Fork of Lynch Canyon Creek associated with Lynch Canyon Dam (point of diversion [POD 1]), tributary to an Unnamed Stream thence Cordelia Slough thence the Suisun Bay.
2. Storage of up to 47 af in an existing on-stream reservoir impounded by an earthen embankment dam located at the Point of Diversion (POD).

3. Stock watering use, fish and wildlife preservation and enhancement use, and recreational use.
4. Spillway crest lowering.
 - a) Construction would occur over a period of approximately two weeks between September and mid-October, after the reservoir has stopped spilling and there is minimal chance for significant rainfall to occur. By this time, it is expected that the reservoir level would be sufficiently drawn down by natural processes (evaporation), which would allow access to the entire work site without having to release water from the reservoir. The Construction Footprint for the spillway crest lowering includes areas where ground-disturbing activities are likely to occur (i.e., access roads, dam spillway, soil spreading areas, and equipment staging area) (Figure 3).
 - b) Access to the site from Lynch Road via existing ranch roads. Road grading would occur on these roads at the level of normal ranch road maintenance to provide safe access for heavy equipment. Construction equipment would be staged at an existing corral located on Lynch Road approximately 0.8 kilometer (km) (0.5 miles [mi]) from the site (Figure 3). It is expected that the following heavy equipment would be required: track excavator, small bulldozer, backhoe/loader, one or two 10-yard dump trucks, and water truck.
 - c) Remove and stockpile existing spillway channel rip-rap.
 - d) Excavate a trapezoidal channel at the location of the existing spillway to a depth of approximately 1.8 m (6 ft) near the crest and to a lesser depth upstream and downstream of the crest as necessary to “daylight” the new channel; rip-rap will be placed within the excavated channel to a depth of about 1 m (3 ft) (Figures 4a, b). This would result in a channel width of 9.1 m (30 ft) at the crest, where the reinforced concrete sill will be installed (Figures 4b). The channel will transition to a 3.6 m (12 ft) width about 7.6 m (25 ft) downstream of the crest (Figure 4b). Reducing the channel width reduces the encroachment of the spillway channel grading on the existing dirt access road located on the south side of the spillway channel and the need for additional grading to maintain road width.
 - e) Excavate a small stilling basin at the base of the spillway channel to reduce flow velocities and minimize stream channelization in the meadow downstream of Lynch Canyon Dam (Figure 4b).
 - f) Spread the excavated earth material at nearby non-environmentally sensitive locations (i.e., soil spreading areas in Figure 3). The volume of excavation is estimated to be approximately 765 m³ [1,000 yard (yd)³], and the limits of work within the channel are estimated to extend from approximately 23 m (80 ft) upstream of the spillway crest to approximately 55 m (180 ft) downstream.

- g) Construct a 0.6 m (2 ft) high berm along the north side of the spillway channel, downstream of the stilling basin to divert spillway flow easterly into the meadow and install two J-Hook rock weirs across the lower portion of the channel to slow and diffuse the water as it flows into the meadow (Figure 4b).
 - h) Reinforce the spillway channel crest with a concrete sill to provide a non-erodible crest section.
 - i) Load the stockpiled rip-rap and place it in the new channel and stilling basin for erosion and scour protection. Import additional rip-rap to complete channel lining. The channel will be rock-lined from approximately 3 m (10 ft) upstream of the crest to the end of the stilling basin, for erosion and scour protection.
 - j) Clear existing vegetation on the upstream face of the dam embankment from about 0.5 m (1.5 ft) below new maximum water storage elevation to the dam crest, regrade using excavated earth material to repair existing wave-wash erosion, and place rip-rap slope protection on finished dam face to protect against future erosion due to wave action, in coordination with California Department of Water Resources Division of Safety of Dams (DSOD).
 - k) Grade a shallow rip-rap lined swale across access road to convey runoff accruing from hills to the south, to the rip-rap protected spillway, then to the stream without eroding the access road (Figure 4b).
 - l) Construct a new cattle exclusion fence around the dam to prevent cattle from accessing the reservoir along the dam embankment, and modify a portion of the existing fence along the southwest shoreline to allow cattle to access water at the new location (Figure 4a, Figure 10). The modified portion of the existing fence will have an opening approximately 40 feet wide to allow cattle to turn around at the water's edge, and it will have extensions that angle into deeper reservoir waters to constrain cows to the designated access location.
5. Seasonally release water outside of the proposed diversion season (June 2 to September 30) such that the inflow to the POD equals the outflow to downstream reaches past the POD.
- a) Install an easily readable staff gage in Lynch Canyon Reservoir near the spillway to allow weekly readings of reservoir water level outside of the Proposed Project diversion season. If a storm event generates a measurable change in reservoir water level outside of the diversion season, any water impounded during the storm event would be released through a siphon.
 - b) Install a siphon at the middle of the dam and deepest portion of the reservoir. The siphon would consist of a 15-cm (6-in) diameter steel pipe which would

- be concrete encased through the dam embankment. A hand-operated diaphragm pump would be used to initiate the siphon action. A flanged butterfly valve and an energy dissipater, consisting of a notched pipe running perpendicular to the downstream direction of flow, would be installed at the downstream end of the siphon outlet (Figure 4c). The siphon would release flow impounded in the reservoir during storm events occurring outside of the diversion season and would dissipate flow releases into the meadow.
- c) The hand-operated diaphragm pump would be stored on-site year-round to allow release to occur for all unauthorized diversions, including during the diversion season and a cap would be installed on the riser (Figure 4c).
6. Emergency spillway repairs conducted in November 2006 to address DSOD concerns that the spillway was damaged by high flows that occurred during a severe storm event earlier that year and was no longer safe. Repairs involved installation of rock rip-rap within the stream channel.

Lowering the spillway crest would remove the dam from the DSOD jurisdiction. Based on topographic mapping of the reservoir, the spillway crest must be lowered by about 3 ft to remove this dam from DSOD jurisdiction. An Application for Alteration of a Dam and Reservoir will be filed with DSOD following the finalization of the Initial Study/Mitigated Negative Declaration. The spillway design will be subject to technical review and approval by DSOD.

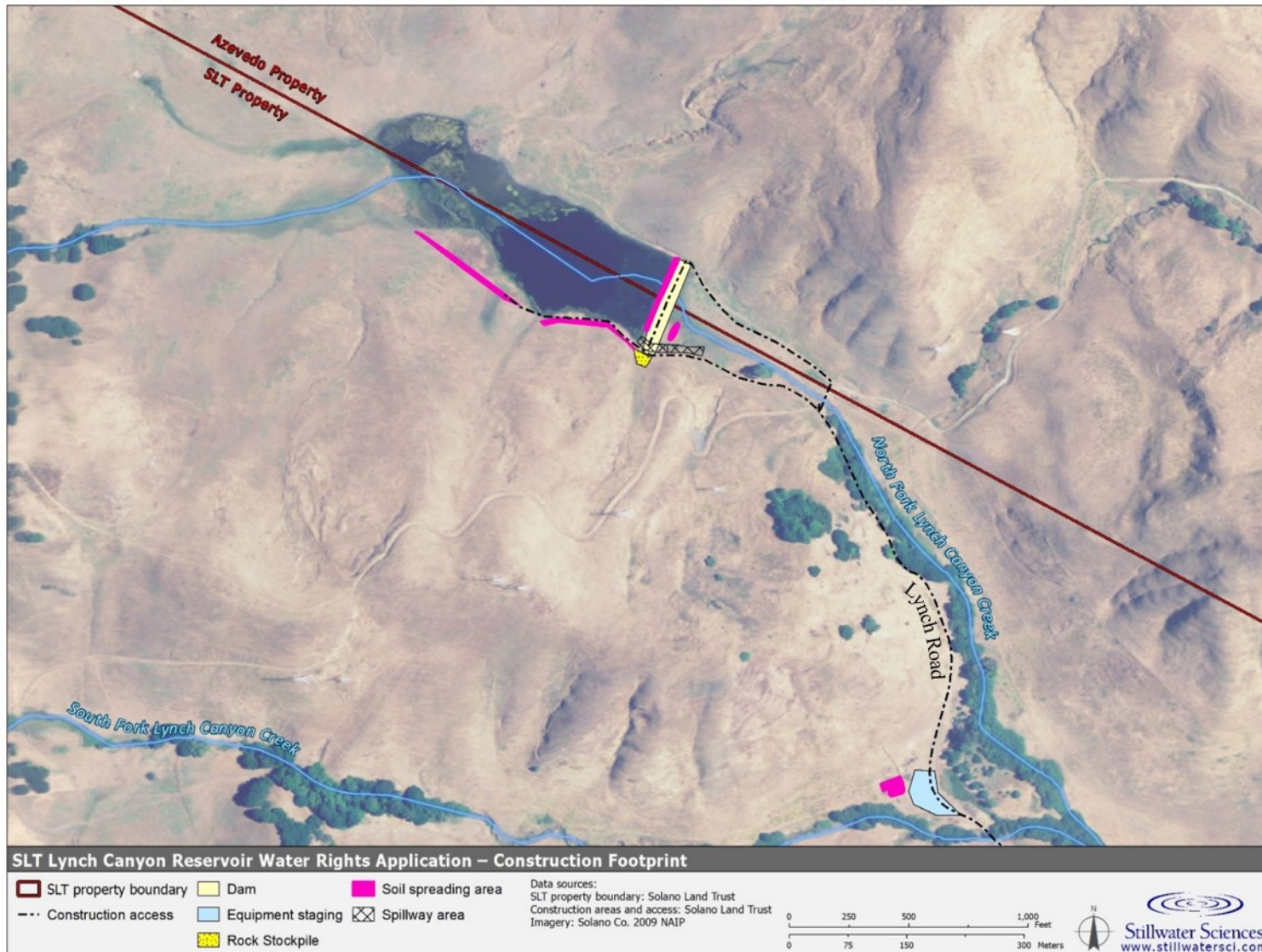


Figure 3. Lynch Canyon Reservoir Water Right Application - Construction Footprint. The drainage area in the vicinity of the construction footprint is located along the northwestern edge of the Lynch Canyon Reservoir and the downstream portion of the North Fork of Lynch Canyon Creek.

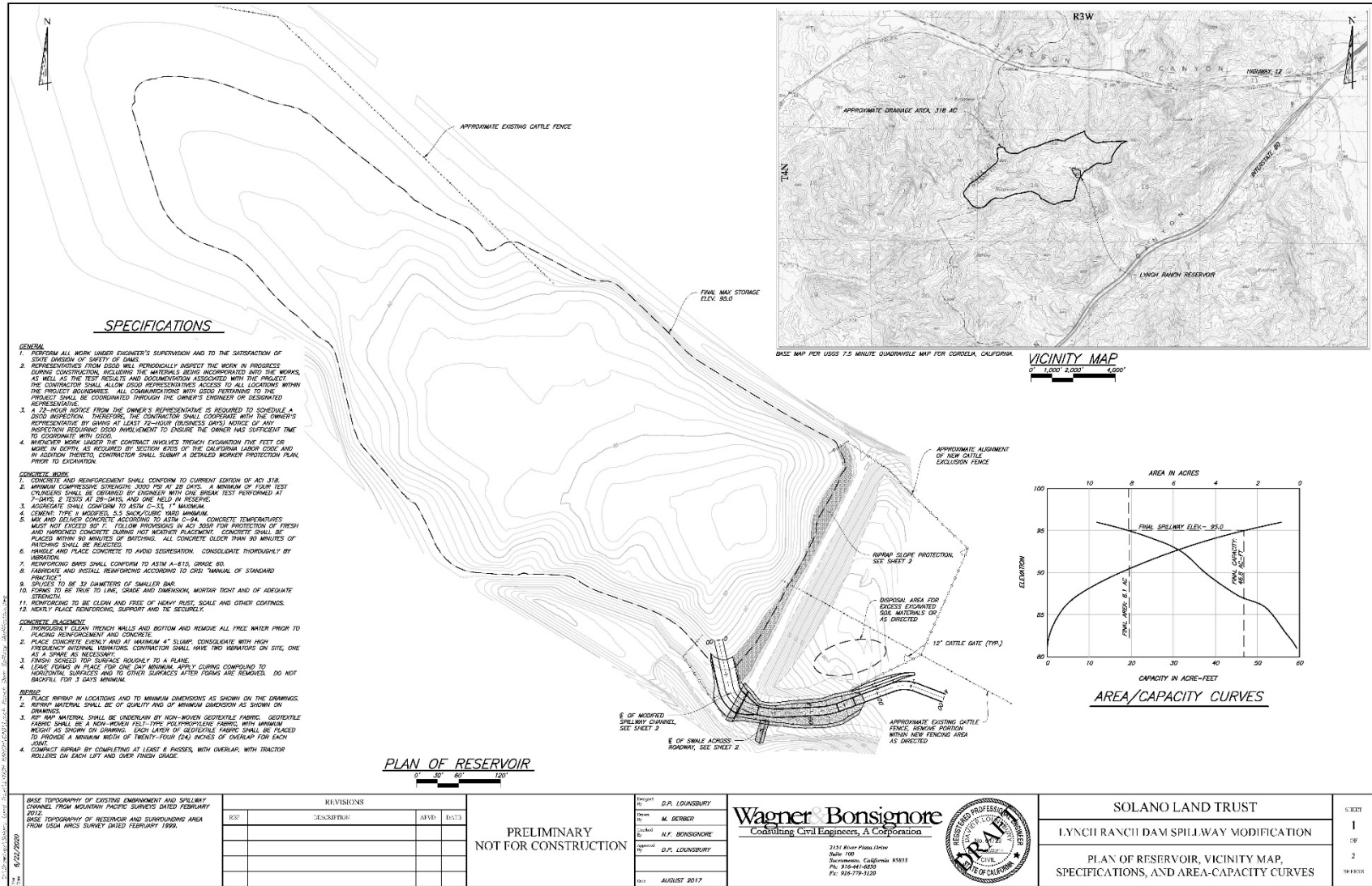


Figure 4a. Lynch Canyon Reservoir Spillway Modification Vicinity Map and Reservoir Plan.

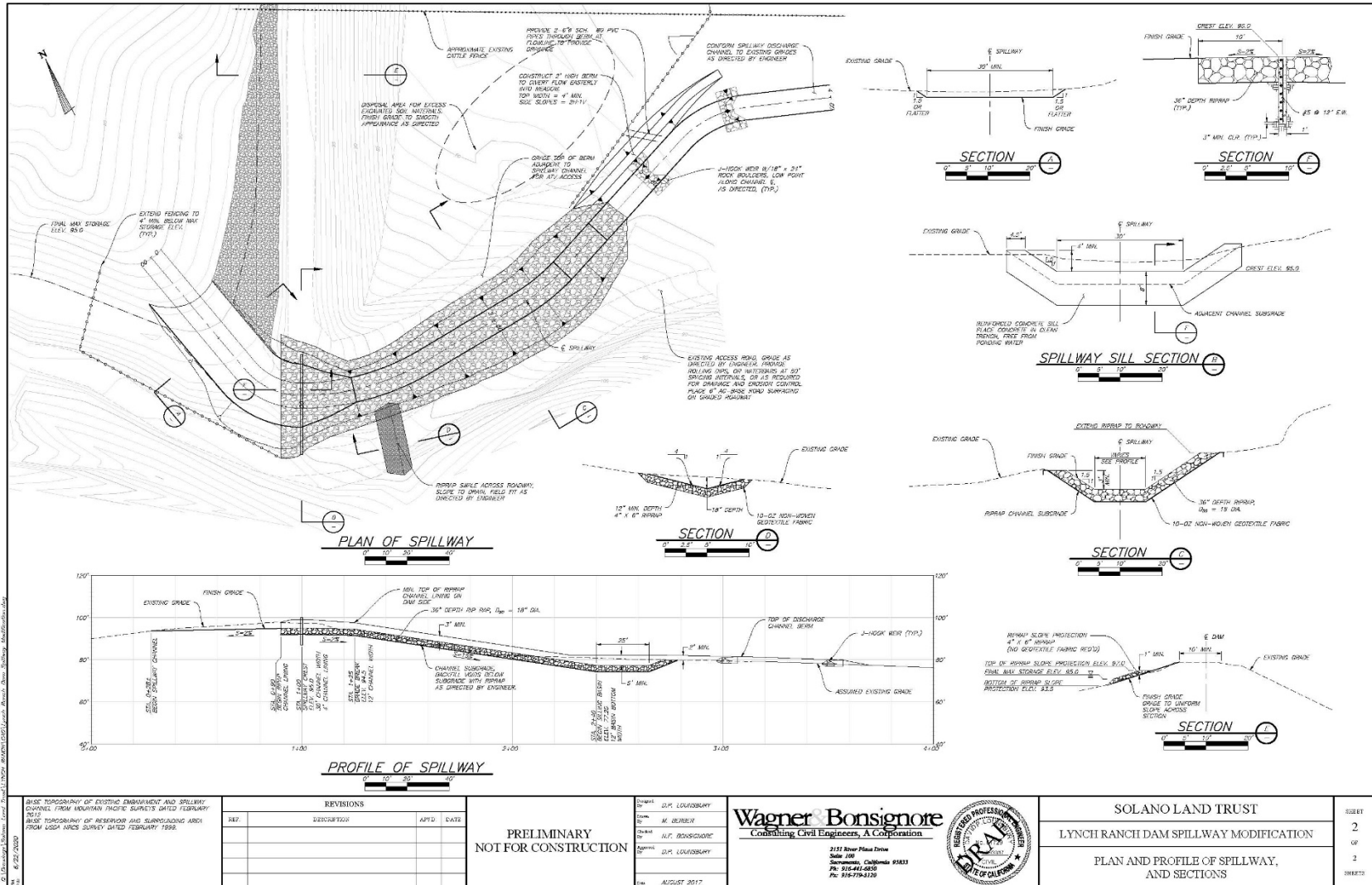


Figure 4b. Lynch Canyon Reservoir Spillway Modification Plan and Spillway Profile.

1.2 Environmental Setting and Baseline Conditions

The Proposed Project is located within an agricultural area in Solano County. The property has been grazed intermittently since 1843, when, along with most of modern-day Solano, Sonoma, and Napa counties, it was purchased by General Mariano Guadalupe Vallejo (RMI 1998). Other than sheep grazing, which was common to the area during the 1920s and 1930s (Ron and Ralph Azevedo, 2007, pers. comm. with Sue Wickham, Solano Land Trust, 2007), cattle grazing has been the dominant agricultural activity in Lynch Canyon through modern day. Grain and cereal crops have been grown periodically on the lower slopes of Lynch Canyon and the remnants of a small orchard can be found close to the South Fork of Lynch Canyon Creek (RMI 1998).

Currently, both Applicants' properties (Lynch Canyon Open Space property and the adjacent property owned by the Azevedo family) are actively grazed by up to 350 cow/calf pairs. The Lynch Canyon Open Space property also contains several miles of trails for hiking, bicycling, and horseback riding, along with multiple small picnic areas. The Lynch Canyon Open Space is open to the public on Saturday and Sunday between April and October.

The Lynch Canyon Reservoir is located on the North Fork of Lynch Canyon Creek along the easterly property line of Lynch Canyon Open Space (Figure 1). Water flows into the reservoir from ephemeral streams upstream of the current reservoir that appear to be fed by groundwater springs in addition to seasonal runoff. The reservoir was created by the construction of a small, unpermitted dam in 1960. The existing 5.7 m (18.8 ft) earthen dam was constructed in the 1970s. At the time the Applicants filed Water Right Application A030949, Lynch Canyon Reservoir capacity was 79 af (Table 1).

The primary use of the Lynch Canyon Reservoir is to provide water for livestock, although the reservoir has been stocked in the past with bluegill and bass for recreational fishing. Although no in-water recreation (e.g., boating) is permitted in the reservoir, the reservoir provides habitat for wildlife species for recreational viewing (e.g., bird watching).

The existing reservoir spillway is a low-slope, trapezoidal, unlined earthen channel located on the right abutment of the dam (looking downstream) with an approximate bottom width of 8 m (25 ft). The spillway currently discharges into a seasonally wet meadow. In November 2006, rock rip-rap was installed within the spillway channel, from the crest to approximately 15 m (50 ft) downstream, to repair scour that occurred during a severe storm earlier that year, and to prevent further deterioration of the spillway channel in the vicinity of the crest. The emergency repairs were requested by DSOD.

Approximately 247 m (810 ft) downstream of the dam, the North Fork of Lynch Canyon Creek emerges from the meadow (Figure 5). An August 1937 aerial image of Lynch Canyon shows emergence of riparian vegetation at approximately the same location, suggesting that there was not a perennial stream channel in the reservoir footprint prior

to construction of the dam. There is insufficient historical information to determine with certainty whether the North Fork of Lynch Canyon Creek flowed freely prior to construction of the dam.

Under existing conditions, surface water short-circuits much of the meadow. After overflow leaves the spillway, it turns north and moves as surface flow directly across the meadow to the fence-line running down the middle of the meadow. Once this surface water hits the fence-line, it turns east and runs along the fence-line toward the culvert at the downstream end of the meadow (R. Azevedo, pers. comm., as cited in Stillwater Sciences 2013).

While the dam has not been permitted by DSOD, the structure has survived several estimated 100-year regional storm events within the last decade. However, an earlier survey noted significant erosion in and around the spillway and concluded that the spillway design was inadequate and would continue to erode and likely fail (Fishbain et al. 1997, as cited in RMI 1998).

Table 1. CEQA baseline conditions and Proposed Project components.

Existing Project components at baseline	CEQA baseline date	Proposed Project components
Seasonal diversion to storage of water in the 79-af Lynch Canyon Reservoir; stockwatering and recreational uses at reservoir	May 5, 1999	Seasonal diversion to storage of up to 47 af of water; stockwatering, fish and wildlife preservation and enhancement, and recreational uses at reservoir
		Construction of a new spillway, lower spillway crest, and new water release siphon at Lynch Canyon Reservoir
		Installation of rock rip-rap within existing spillway (November 2006)

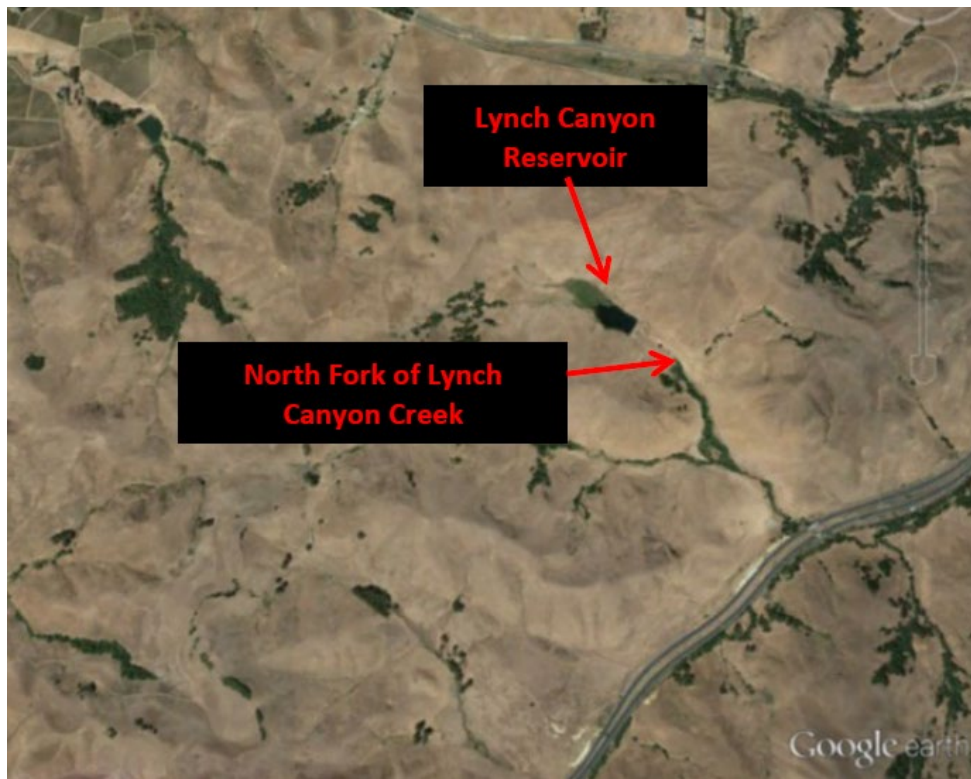


Figure 5. Lynch Canyon Creek Watershed circa 1937 (top) and in 2012 (bottom).

Regulatory Environment

The State Water Board is the lead agency under the California Environmental Quality Act (CEQA) with the primary authority for project approval. The following responsible, trustee, and federal agencies may have jurisdiction over some or the entire Proposed Project:

- The California Department of Fish and Wildlife (CDFW)¹—California Endangered Species Act (CESA) Compliance and 1602 Lake or Streambed Alteration Agreement
- U.S. Fish and Wildlife Service (USFWS)—Endangered Species Act (ESA) compliance
- National Marine Fisheries Service (NMFS)—ESA compliance
- County of Solano—County Use Permit
- San Francisco Bay Regional Water Quality Control Board (RWQCB)—Clean Water Act Section 401 Water Quality Certification
- U.S. Army Corps of Engineers (USACE)—Clean Water Act Section 404 Compliance
- Department of Water Resources, Division of Safety of Dams (DSOD)—Alteration of Dam and Reservoir Permit

The Applicants are currently coordinating with CDFW and DSOD regarding relevant elements of the Initial Study. The Applicants are receiving technical assistance from USFWS, which is the precursor to formal consultation and development of a Biological Assessment. The Applicants are also receiving technical assistance from NMFS regarding the potential for impacts to anadromous fish species. A summary of coordination activities to date is presented below:

- March 17, 2004—Applicants sent a letter to DSOD informing them of plans to abate the illegal status of the dam by bringing the dam out of DSOD jurisdiction by lowering the spillway.
- April 7, 2004—DSOD sent a letter to Applicants requesting a construction application.
- June 29, 2006—DSOD sent a letter to Applicants requiring emergency action to correct storm-related spillway damage by October 1, 2006.

¹ CDFW was formerly known as the California Department of Fish and Game. References contained in this document to reports and data developed by CDFW prior to their name change list the California Department of Fish and Game as the author.

- April 15, 2008—Applicants attended a site visit with staff from CDFW and Division of Water Rights to begin the initial study process.
- September 5, 2008—CDFW provided the points of interest (POIs) needed for calculating the Cumulative Flow Impairment Index (CFII) and preparing the Water Availability Analysis (WAA) for the Proposed Project.
- April 12–28, 2011—Consultant communicated with CDFW (Yountville Office), NMFS (Southwest Region), and USEPA (Region 9) regarding the historical distribution of *Oncorhynchus mykiss* (*O. mykiss*) in northern California and the Bay Area.
- June 18, 2012—DSOD performed a periodic maintenance inspection of Lynch Canyon Dam and indicated that the dam is safe for continued operation while the Applicants work toward removing the dam from DSOD jurisdiction. DSOD provided recommended maintenance terms.
- September 20, 2012—Applicants provided DSOD the preliminary engineering plans and project description for comments, at the request of the Division of Water Rights (Solano Land Trust 2012).
- October 9, 2012—Consultant coordinated with CDFW regarding the addition of a fourth POI and addendum to the WAA, as requested by Division of Water Rights, development of bullfrog and non-native fish control measures, and development of burrowing owl mitigation measures.
- November 20, 2012—DSOD responded to the Applicants' September 20, 2012 letter and indicated no specific comments on the preliminary engineering plans and project description. DSOD also indicated that approval of the dam alteration application requires final design plans and specifications, the appropriate filing fee, compliance with CEQA requirements, and evidence of water rights (California Department of Water Resources 2012).
- November 2012—Consultant coordinated with USFWS regarding the appropriate timing of formal consultation on the California red-legged frog and development of a Biological Assessment.
- April 9, 2013—Applicants attended a site visit with staff from CDFW and Division of Water Rights to discuss potential bypass requirements.
- June 6, 2013—Consultant communicated with NMFS (Southwest Region) regarding the current distribution of anadromous fish species in the vicinity of the Proposed Project.
- September 25, 2017—Applicants submitted draft final engineering plans for DSOD review. DSOD provided comments on the draft plans via email on July 16, 2019.

- June 22, 2019—Applicants submitted revised draft final engineering plans for DSOD review. The revised plans address DSOD comments regarding the placement of rip-rap in the dam spillway foundation, the location of excavated material disposal in the area downstream of the dam, and concrete specifications. As of September 8, 2020, plans remain in review.

2. ENVIRONMENTAL IMPACTS

The environmental factors checked below could be potentially affected by this project and are discussed in more detail in the checklist on the following pages.

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

2.1 Geology and Soils

1. GEOLOGY AND SOILS: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
(ii) Strong seismic ground shaking?				X
(iii) Seismic-related ground failure, including liquefaction?				X
(iv) Landslides?				X
(b) Result in substantial soil erosion or the loss of topsoil?		X		
(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?				X
(d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code of 1994, creating substantial direct or indirect risks to life or property?				X
(e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X

2.1.1 Environmental setting

A large number of active faults are present within the San Francisco Bay Area and Coast Range-Central and the region has been the site of numerous moderate and large magnitude earthquakes. According to the official maps of Earthquake Fault Zones delineated by the California Geological Survey, under the Alquist-Priolo Earthquake Fault Zoning Act, no known active faults cross the Proposed Project and it is not located within any Special Study Zones (CGS 2019). However, the Proposed Project is located approximately 1.6 km (1 mi) from the edge of the Green Valley Fault Special Studies

Zone Boundary (USGS 2012). The region is subject to strong earthquakes, as is much of California, and the Proposed Project site may be subject to seismic shaking.

Liquefaction is a phenomenon associated with earthquakes in which saturated cohesionless soils are subject to a temporary loss of shear strength because of pore pressure build-up under cyclic shear stresses. The Proposed Project is located within an area that has moderate susceptibility to liquefaction (Division of Mines and Geology 1993). Within the Lynch Canyon Creek channel, erosion and gulying occurs at high rates (RMI 1998). Over the past 150 years, the naturally high rate of bank failures has likely increased due to grazing-induced conversion of native oak groves and perennial bunch grasses to annual grasses (Fishbain et al. 1997). Throughout the entire American Canyon Creek watershed, severe erosion and loss of sediment is common (Fishbain et al. 1997). Downstream of Lynch Canyon Reservoir, and within the Lynch Canyon Open Space property, there are several locations exhibiting bank failure and riparian zone erosion. A survey of erosion sites was conducted in the Lynch Canyon Creek watershed during development of the Lynch Canyon Resource Management Plan in 1998 (RMI 1998).

The Lynch Canyon Reservoir spillway is a low-slope vegetated channel, with an approximate bottom width of 7.6 m (25 ft). In November 2006, rock rip-rap was installed within the spillway channel, from the crest to approximately 15 m (50 ft) downstream, to repair scour that occurred during a severe storm earlier that year, and to prevent further deterioration of the spillway channel in the vicinity of the crest. The emergency repairs were requested by DSOD.

A custom soil resources report was conducted in May 2012 (Natural Resources Conservation Service 2012). The soil type at the Lynch Ranch Dam spillway is identified as Rincon clay loam, 2 to 9 % slopes (RoC), of which the upper 5 ft is classified mostly as CL (Natural Resources Conservation Service 2012). CL is defined as inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, and lean clays. These soils are not considered to be expansive. The soil profile possesses zones of soils classified as SC (clayey sands, sand-clay mixtures), which are not considered to be expansive, and CH (inorganic clays of high plasticity, fat clays), which are considered to be potentially expansive. However, the CH soil type is not the predominant soil type in the profile (N. Bonsignore, pers. comm., 2011; Natural Resources Conservation Service 2012). Expansive soils are a concern for structures, foundations, and pavement or other hard surfaces.

Lynch Canyon Reservoir is located within an agricultural area and a designated open space, with very little infrastructure present within the boundaries of the open space and downstream along Lynch Canyon Creek and Red Top/American Canyon Creek. Interstate 80 represents the most substantial infrastructure proximal to the dam, with a contemporary 120-inch diameter structural steel plate pipe culvert at the crossing of Lynch Canyon Creek. Interstate 80 is located approximately 0.9 miles downstream of Lynch Canyon Reservoir on a right-of-way that is raised approximately 70 feet above the creek bottom on the westbound side and 35 feet above the creek bottom on the eastbound side. Red Top/American Canyon Creek subsequently runs along McGary

Road (which runs parallel to Interstate 80) for approximately 0.4 miles, and then heads north and east away from the road/highway and toward Cordelia marsh and slough. Approximately 3.1 miles downstream of the dam, the creek flows past a small water impoundment and then through the northern portion of the Cordelia Housing Development, which includes the only known habitable structures downstream of the dam, prior to flowing into Cordelia marsh and slough (Figure 6).

Lynch Canyon Reservoir is surrounded by the Eocene aged Markley Formation and Quaternary aged alluvial fan deposits (Figure 7). The Markey Formation is one of the marine sedimentary units that overlie the Cretaceous Great Valley Sequence in this area and the Eocene units, and in particular their paleontology, is described by Graymer et al. in US Geological Survey Open File Report 99-162 (Graymer et al. 1999). The nanoplankton and foraminifers, which are microscopic invertebrate fossils found in the mudstone units of the formations, are able to be dated and clearly point to the marine origin of these rocks. In some locations, the Markley Formation contains carbonaceous material which may have originated in delta-like systems. Immediately surrounding the Lynch Canyon Dam is Quaternary aged alluvial fan deposits which are sediments deposited in the creek and stream areas in the past.

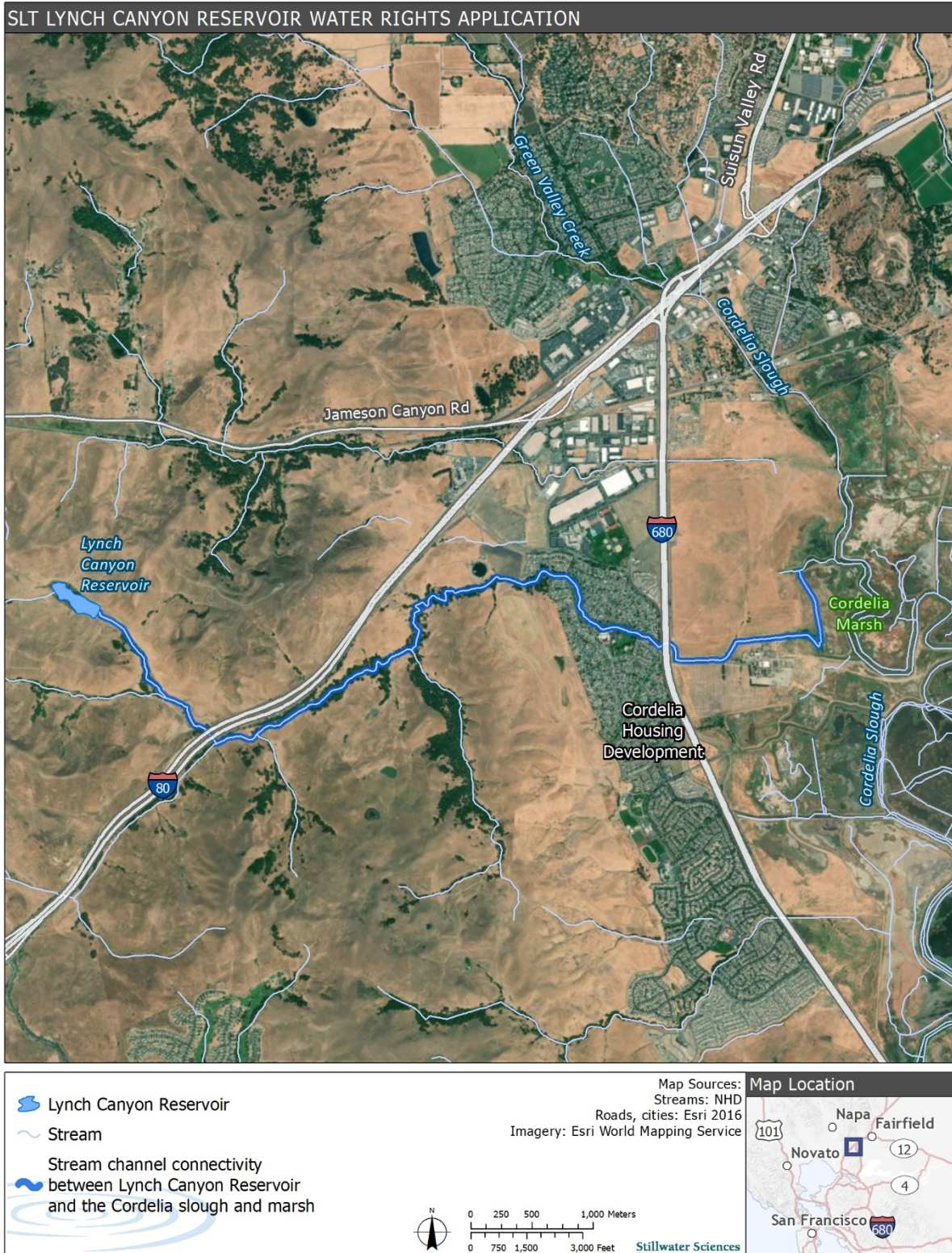


Figure 6. Stream channel connectivity between Lynch Canyon Reservoir and Cordelia Slough and Marsh.

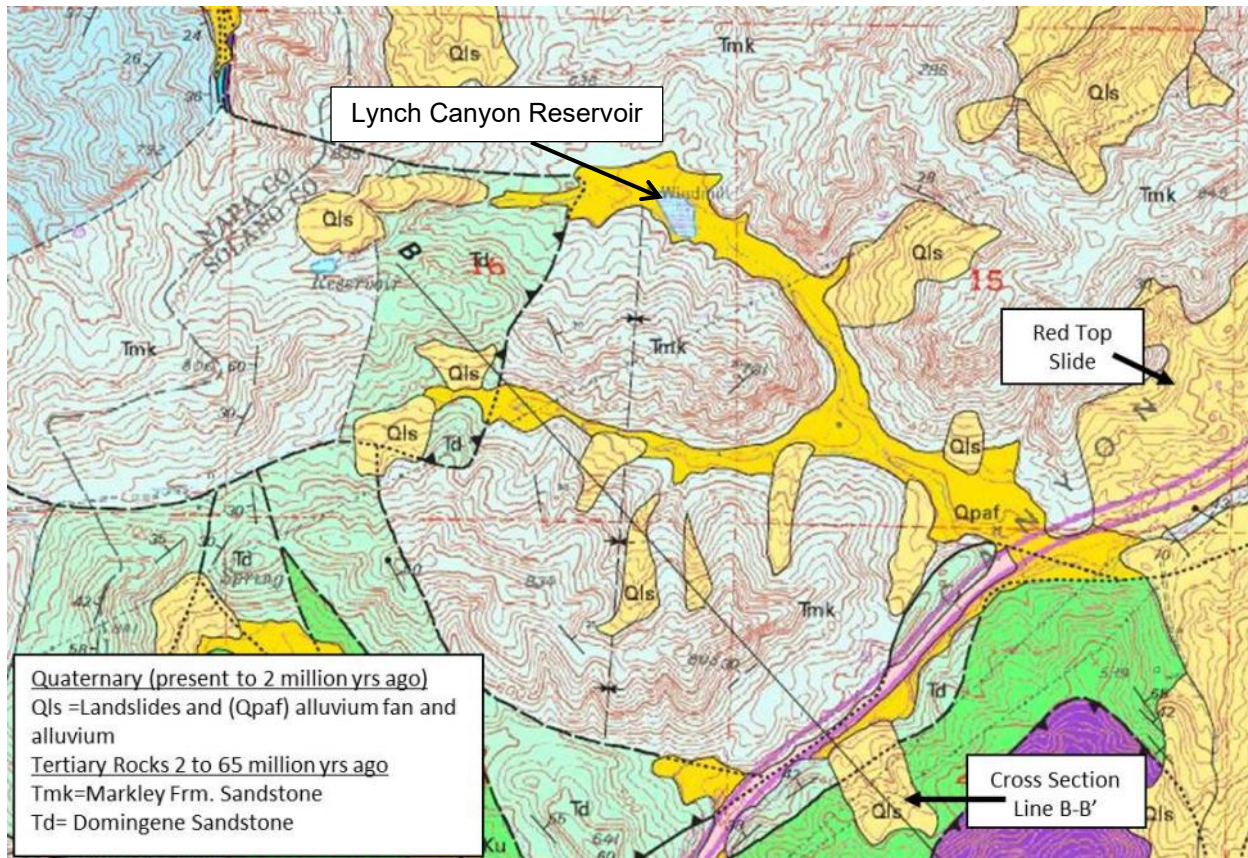


Figure 7. Formations surrounding the Proposed Project Area (Graymer et al. 1999).

2.1.2 Findings

- (a) (i) *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated in 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?***

The Proposed Project is not located within the Alquist-Priolo Earthquake Fault Zone, it does not cross any known active faults, and it is not located within any Special Study Zones. While the risk of failure of the current dam is considered to be unlikely (RMI 1998), in a large earthquake the potential for failure would increase. Interstate 80 is located approximately 0.9 miles downstream of the reservoir near the mouth of Lynch Creek. Under existing conditions, severe flooding of vehicular traffic on Interstate 80 due to earthquake-induced dam failure is unlikely since the roadway is located 35 feet above the creek bottom and the size of the culvert is 120 inches in diameter, which is rated to convey about 1,400 cfs (cubic feet per second) under full-flow and free-outfall conditions at a 1% slope (Robin Amatya, Caltrans Senior Transportation Engineer, June 26, 2019). Given that there are no habitable structures immediately downstream

of Lynch Canyon Dam, and the nearest habitable structures in the Cordelia Housing Development are located approximately 3.1 miles away, there is no discernible risk that failure of Lynch Canyon Dam due to an earthquake would result in severe flooding of habitable structures in this development under existing conditions. Since the Proposed Project would reduce reservoir capacity from 79 af to 47 af, it would further reduce the potential for downstream flooding of existing infrastructure should the dam fail as the result of an earthquake because the volume of water stored in the reservoir would be decreased by approximately 40%. Additionally, the Proposed Project would also improve the spillway and decrease the risk of continued erosion and likely failure of the spillway structure (Fishbain et al. 1997, as cited in RMI 1998). Thus, the Proposed Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, as compared with existing conditions and there would be no impact.

(a) (ii) *Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?*

Similar to the analysis presented above (2.1.2 [a][i]), improving the spillway and reducing reservoir capacity from 79 af to 47 af under the Proposed Project would decrease the already extremely low risk of loss, injury, or death resulting from potential dam failure induced by strong seismic ground shaking. The Proposed Project does not include deep trenching or other ground disturbance that would cause seismic ground shaking. There would be no impact.

(a) (iii) *Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?*

Although the Proposed Project is located within an area of moderate liquefaction susceptibility, similar to the analysis presented above (2.1.2 [a][i]), improving the spillway and reducing reservoir capacity from 79 af to 47 af under the Proposed Project would decrease the already extremely low risk of loss, injury, or death resulting from potential dam failure involving seismic-related ground failure, including liquefaction. The Proposed Project does not include deep trenching or other ground disturbance that would cause any seismic-related ground failure or liquefaction. There would be no impact.

(a) (iv) *Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?*

Proposed construction activities do not include deep trenching or other ground disturbance that would be proximal to steep, unconsolidated hill slopes and that could trigger landslides. The closest housing development (Cordelia Housing Development) is located about 3.1 miles away and Interstate 80 is located about

0.9 miles downstream of Lynch Canyon Creek (Figure 7), neither of which are proximal to construction activities. No habitable structures were built or would be built as part of the Proposed Project. There would be no impact.

(b) *Would the project result in substantial soil erosion or the loss of topsoil?*

Proposed Project actions would result in long-term, site-specific flow modifications and short-term, construction-related ground disturbance that could increase the potential for soil erosion and loss of topsoil. These actions are analyzed below.

In the long term under the Proposed Project, flows would increase to the meadow immediately downstream of the POD. Under existing conditions, spillway overflow turns north after leaving the spillway and moves as surface flow directly across the meadow to the fence-line running down the middle of the meadow. Once surface water hits the fence-line, it turns east and runs along the fence-line toward the culvert at the downstream end of the meadow. Thus, under existing conditions, surface water short-circuits much of the meadow (R. Azevedo, pers. comm., as cited in Stillwater Sciences 2013). During the diversion season, increasing release flows to the meadow could result in erosion in the channelized areas running toward or along the fence-line. To avoid further channelization of flows between the spillway and the culvert at the upstream end of the North Fork of Lynch Canyon Creek, CDFW has requested, and the Applicants have agreed to, a modification in the existing spillway to reduce flow velocities and dissipate water into the meadow. Consequently, the spillway would be lined with rip-rap and a small stilling pool would be placed at its base to facilitate gentle surface flow and shallow groundwater flow into the meadow. In addition, the Proposed Project would direct some of the spillway flow towards the south east portion of the meadow by constructing a 0.6 m (2 ft) high berm along the north side of the spillway channel, downstream of the stilling basin to divert spillway flow easterly into the meadow; this includes installing two J-Hook rock weirs across the lower portion of the channel to slow and diffuse the water as it flows into the meadow (Figure 4b). This would more evenly spread flows across the meadow during periods when the reservoir is spilling, decrease the potential for erosion, and support meadow ecosystem functions such as nutrient uptake and flood attenuation. Outside of the diversion season, siphon releases would be also dissipated into the meadow (see also discussion under Hydrology and Water Quality a(i)). Impacts would be less than significant as a result of the proposed long-term flow modifications.

The Proposed Project involves short-term construction-related ground disturbance, including removal and stockpiling of existing rip-rap; excavation and grading of the spillway channel to a depth of approximately 1 m (3 ft) near the crest, and to a lesser depth upstream and downstream of the crest as necessary to “daylight” the new channel; spreading of the excavated material at nearby, non-environmentally sensitive locations (i.e., soil spreading sites); and placement of existing and imported rip-rap in the new channel for erosion

control. The volume of excavation is estimated to be approximately 765 m³ (1,000 yd³), and the limits of work within the channel are estimated to extend from approximately 23 m (80 ft) upstream of the present spillway crest to approximately 24 m (80 ft) downstream. The aforementioned proposed ground disturbing activities would increase the potential for soil erosion and loss of topsoil during and immediately following the construction period and this would be a significant impact. To reduce this impact to a less than significant level, the following mitigation measures, substantially as written, will be included in any permit issued pursuant to water right application 30949:

Mitigation Measure GS-1 – Erosion and Sediment Control Plan: *No work on upgrades to Lynch Canyon Reservoir shall commence until an erosion and sediment control plan, approved by the Deputy Director for Water Rights, has been implemented by the right holder. The erosion and sediment control plan shall be prepared by a certified professional in erosion and sediment control, and shall describe the measures that will be implemented by the right holder to control accelerated erosion and sedimentation during project construction, and the measures that will be used to revegetate and stabilize disturbed areas once construction is complete. Measures will include, at a minimum, the following:*

- *Limit the extent of the Construction Footprint as much as possible, clearly marking all construction areas (e.g., designated access roads and staging areas), and confining all construction activities to these locations.*
- *Restrict stockpiling of construction materials, including portable equipment and supplies, to designated staging areas.*

Before storing water in the reservoir, right holder shall furnish evidence which substantiates that the erosion and sediment control plan has been implemented. Evidence includes photographs showing the project area vegetation and slopes.

Mitigation Measure GS-2 – Construction Debris Control: *No debris, soil, silt, cement that has not set, or other such foreign substance will be allowed to enter or be placed where it may be washed by rainfall runoff into the waters of the State. When operations are completed, any excess construction-related materials or debris shall be removed from the work area.*

Mitigation Measure GS-3 – Regulatory Compliance: *No water shall be diverted or used under this right, and no construction related to such diversion shall commence, unless right holder has obtained and is in compliance with all necessary permits or other approvals required by other agencies. If an amended right is issued, no new facilities shall be utilized, nor shall the amount of water diverted or used increase beyond the maximum amount diverted or used during the previously authorized development schedule, unless right holder has obtained and is in compliance with all necessary requirements, including but not limited to the permits and approvals listed in this term.*

Within 90 days of the issuance of this right or any subsequent amendment, right holder shall prepare and submit to the Division of Water Rights a list of, or provide information that shows proof of attempts to solicit information regarding the need for, permits or approvals that may be required for the project. At a minimum, right holder shall provide a list or other information pertaining to whether any of the following permits or approvals are required: (1) lake or streambed alteration agreement with the Department of Fish and Wildlife (Fish & G. Code, § 1600 et seq.); (2) Department of Water Resources, Division of Safety of Dams approval (Wat. Code, § 6002); (3) Regional Water Quality Control Board Waste Discharge Requirements (Wat. Code, § 13260 et seq.); (4) U.S. Army Corps of Engineers Clean Water Act section 404 permit (33 U.S.C. § 1344); and (5) local grading permits.

Right holder shall, within 30 days of issuance of any permits, approvals or waivers, transmit copies to the Division of Water Rights.

- (c) *Would the project 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?***

Although the Proposed Project is located approximately 1.6 km (1 mi) from Green Valley Fault Special Studies Zone Boundary and in soils with moderate liquefaction susceptibility, the proposed reconfiguration of the dam spillway to lower the crest by 2 to 3 feet would not involve deep trenching or other ground disturbance that would cause on- or off-site ground failure, landslides, lateral spreading, subsidence, liquefaction, or collapse. There would be no impact.

- (d) *Would the project be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?***

Expansive soils, which expand when water is added and shrink when they dry out, have the potential to change soil volume and could cause risks to life or property (e.g., expansive soils can cause buildings placed upon them to move unevenly and crack). The Proposed Project is located within zones of soil classified as CH, which are potentially expansive. However, CH soils are not the predominant soil type in the profile (N. Bonsignore, Wagner & Bonsignore, Consulting Civil Engineers, Corporation. pers. comm., May 25, 2011, Natural Resources Conservation Service 2012). Further, the only structure on soils that would be affected by the Proposed Project is the dam spillway. While the dam spillway would normally be inundated with water during the wet season and portions would dry out during the dry season, these conditions would be the same as those under existing conditions. Further, the Proposed Project includes reinforcing the channel crest with a concrete sill to provide a non-erodible crest section, and the new channel and stilling basin will be stockpiled with rip-rap to

further stabilize soils. Therefore, there would be no direct or indirect risk to life or property related to expansive soils under the Proposed Project.

(e) *Would the project have soils incapable of adequately supporting the use of septic tanks or alternate wastewater disposal systems where sewers are not available for the disposal of wastewater?*

No septic tanks or wastewater disposal systems were or are proposed as part of the Proposed Project. Accordingly, there would be no impact.

2.2 Air Quality

2. AIR QUALITY: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Conflict with or obstruct implementation of the applicable air quality plan?				X
(b) Violate any air quality standard or result in a cumulatively considerable net increase in an existing or projected air quality violation?				X
(c) Expose sensitive receptors to substantial pollutant concentrations?				X
(d) Result in substantial emissions (such as odors or dust) adversely affecting a substantial number of people?			X	

2.2.1 Environmental setting

The Proposed Project is located within the San Francisco Bay Area Air Basin and is managed by the Bay Area Air Quality Management District. The climate of the region is Mediterranean year-round with mild rainy-winters, breezy and cool springs, warm sunny summer days, and cool fall evenings. Because the wind flow patterns in this area are altered by the complex terrain of bays, inland valleys, and coastal mountain ranges, pollution created in the southern portion of Solano County is transported to the northeastern portion of Solano County – the Sacramento Valley Air Basin (DRM 2008). Concentrations of air quality pollutants are used as indicators of ambient air quality conditions.

The USEPA and state California Air Resources Board ambient air quality standards provided in Table 2 are monitored by the agencies and the Bay Area Air Quality Management District (http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm). The Bay Area Air Quality Management District monitors many air quality monitoring stations throughout the Bay Area. The closest monitoring station is the Vallejo Station,

located approximately 7 mi from the Proposed Project and available data is summarized in Table 2. Air pollutants of concern, federal and state regulations for air quality standards, emission limits for individual sources of air pollutants, and existing air quality conditions in the region are summarized in Table 2. Solano County is designated nonattainment for state and national ozone standards and state suspended particulate matter (PM₁₀) standards (<http://www.arb.ca.gov/desig/adm/adm.htm>).

Table 2. Federal and state regulations and emission limits for pollutants and existing air quality conditions in the region.

Pollutants	Description	Standards		Existing air quality in the region
		U.S. Environmental Protection Agency	California Air Resources Board (2016)	
Ozone (O ₃)	A primary component of smog is formed from the byproducts of fossil fuel combustion and evaporation fuels and chemical solvents	8-hour standard of 0.070 ppm (USEPA 2015)	1-hour standard of 0.09 ppm and 8-hour standard of 0.070 ppm	Trends between 2002 and 2008 have remained relatively consistent, although generally less than those recorded in the 1970s (BAAQMD 2010). The Vallejo station recorded average 0.26 ppm average ozone levels between January–August 2012 (http://gate1.baaqmd.gov/aqmet/AQYearly.aspx). Solano County is designated as non-attainment for state and national ozone standards (http://www.arb.ca.gov/desig/adm/adm.htm).
Carbon monoxide (CO)	An invisible gas produced by an incomplete combustion of carbon in fuels (e.g., mobile sources, wood-burning stoves, factories)	1-hour standard at a level of 35 ppm and 8-hour standard at a level of 9 ppm not to be exceeded more than once per year (USEPA 2011)	1-hour standard at 20 ppm and 8-hour standard at 9.0 ppm	The Vallejo station recorded average 3.0 ppm carbon monoxide levels January–August 2012 (http://gate1.baaqmd.gov/aqmet/AQYearly.aspx). Solano County is designated as attainment for state and unclassified/attainment for national carbon monoxide standards (http://www.arb.ca.gov/desig/adm/adm.htm).
Nitrogen dioxide (NO ₂)	A highly reactive gas with major human-made sources from combustion devices (e.g., internal-combustion engines)	1-hour standard at a level of 100 ppb, based on the 3-year average of the 98% of the yearly distribution of 1-hour daily maximum concentrations (USEPA 2010b) and annual standard of 53 ppb based on an annual mean (USEPA 1996)	1-hour standard at 180 ppb and an annual arithmetic mean standard of 30 ppb	Between 2006 and 2009, the days exceeding the state standard decreased to less than five days and no days exceeded the national standard (BAAQMD 2010). The Vallejo station recorded average 9 ppb nitrogen dioxide levels between January–August 2012 (http://gate1.baaqmd.gov/aqmet/AQYearly). Solano County is designated as attainment for state and unclassified/attainment for national nitrogen dioxide standards (http://www.arb.ca.gov/desig/adm/adm.htm).

Pollutants	Description	Standards		Existing air quality in the region
		U.S. Environmental Protection Agency	California Air Resources Board (2016)	
Sulfur dioxide (SO ₂)	A toxic gas produced from natural (volcanos) and man-made sources (e.g., pulp mills and combustion of oil and coal)	1-hour standard of 75 ppb and 3-hour standard based on 0.5 ppm based on the 3-year average of the annual 99% of one-hour daily maximum concentrations (USEPA 2010a and USEPA 1973)	1-hour standard of 0.25 ppm and 24-hour standard of 0.4 ppm	The Vallejo station recorded average 1 ppb (0.001 ppm) sulfur dioxide levels between January–August 2012 (http://gate1.baaqmd.gov/aqmet/AQYearly). Solano County is designated as attainment for state and national sulfur dioxide standards (http://www.arb.ca.gov/desig/adm/adm.htm).
Suspended particulate matter (PM ₁₀)	Airborne matter with a diameter of 10 micrometers or less, which is primarily emitted directly from fuel combustion, industrial wood and paper manufacturing, paved road dust, and wood-burning fireplaces	150 µg /m ³ over 24 hours (USEPA 2006)	24-hour standard of 50 µg /m ³ and an annual arithmetic mean of 20 µg /m ³	In nearby San Francisco County, the maximum 24-hour PM ₁₀ concentration reached in 1998 was 0.000078 g/m ³ , however the federal standards were not exceeded (http://www.cpuc.ca.gov/Environment/info/esa/pot hp/initial_study/2_3airquality.pdf). Solano County is designated as nonattainment for state and unclassified for national suspended particulate matter (PM ₁₀) standards (http://www.arb.ca.gov/desig/adm/adm.htm).

Notes: ppm = parts per million; ppb = parts per billion; µg /m³ = micrograms per cubic meter

2.2.2 Findings

The BAAQMD's CEQA Air Quality Guidelines (2017) include screening criteria for proposed construction projects, which provide a conservative indication of whether a proposed construction project could result in potentially significant air quality impacts. The size of the Proposed Project's spillway modification area is approximately 2.5 acres, which is below the minimum construction-related screening size of 5.9 acres for all of the land use types listed in the CEQA Air Quality Guidelines (BAAQMD 2017). Additionally, the total amount of material to be excavated from the spillway area and dispersed as fill (approximately 1,000 cubic yards) would not require a considerable amount of truck haul activity (BAAQMD 2017). As such, the Proposed Project is not expected to produce construction exhaust emissions equal to or greater than the thresholds of significance for construction-related criteria air pollutants and precursors, and an emissions model does not need to be developed for the below analysis.

For some air quality constituents, impacts are determined based on the distance to the closest sensitive receptor. The nearest sensitive receptors to the Proposed Project are residential homes and businesses in the community of Cordelia, CA (estimated population of 8,444), with the nearest residence located approximately 0.75 miles north of Lynch Canyon Reservoir in rural Solano County.

(a) *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

The Proposed Project has no components that would generate substantial air emissions. There would be no large-scale long-term operational-related emissions and the proposed short-term construction activities would be limited in scale (i.e., over an area of approximately 2.5 acres) and duration (i.e., over a period of approximately two weeks). Therefore, the Proposed Project would not conflict with or obstruct implementation of any applicable air quality plan and there would be no impact.

(b) *Would the project violate any air quality standard or result in a cumulatively considerable net increase in an existing or projected air quality violation?*

Due to the lack of substantial air emissions that would be generated by the Proposed Project (see 2.2.2[a]), the Proposed Project would not exceed state or federal air quality standards and would therefore not violate any air quality standard or contribute substantially to an existing or projected air quality violation. There would be no impact.

(c) *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Construction activities associated with the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations. The nearest sensitive receptors to the Proposed Project are residential homes and businesses in the community of Cordelia, CA (estimated population of 8,444), with the nearest residence located approximately 0.75 miles north of Lynch Canyon Reservoir in rural Solano County. Furthermore, the Proposed Project would not result in substantial pollutant concentrations due to the small footprint and temporary nature of Proposed Project construction activities. There would be no impact.

(d) Would the project result in substantial emissions (such as odors or dust) adversely affecting a substantial number of people?

During the construction period (September through mid-October), the Lynch Canyon Open Space would be open to the public on Saturdays and Sundays only. While a small number of visitors may be present during any construction activities that extend through the weekend, the standard construction equipment that would be used (e.g., excavator, bulldozer, dump trucks) would not generate a high degree of odors that would adversely affect a substantial number of people. Since Lynch Canyon Reservoir is relatively shallow and is not likely to support large areas of anoxic bottom sediments, and it is expected that the reservoir level would be sufficiently drawn down by natural processes (evaporation) such that no water would have to be released from the reservoir to allow work site access, the Proposed Project would not expose people to malodorous sediments during the construction period. While dust emissions could occur during planned grading of dirt access roads and the spillway channel, like other air emissions, these would be limited in scale (i.e., over an area of approximately 2.5 acres) and even further limited in duration (i.e., on Saturdays and Sundays only during the two-week construction period) and thus would not affect a substantial number of people. This would be a less-than significant impact.

2.3 Energy

3. ENERGY: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?				X
(b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

2.3.1 Environmental setting

The Solano County General Plan includes goals and policies to ensure sustainable provision of energy (DRM 2008). These goals and policies include, but are not limited to, ensuring availability of affordable energy supplies and require efficiency and conservation measures to minimize energy consumption; ensure energy conservation and reduced energy demand in the county through required use of energy-efficient technology and practices; provide incentives for city and county residents and businesses to produce and use renewable sources of energy; promoting Solano County as a model for energy efficiency and green building, and enabling renewable energy sources to be produced from resources available in Solano County, such as solar, water, wind, and biofuels to reduce the reliance on energy resources from outside the county. The California Energy Commission Code Title 24 is designed to reduce wasteful and unnecessary energy consumption in newly constructed and existing buildings. (California Energy Commission 2019)

2.3.2 Findings

- (a) ***Would the Proposed Project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?***

The Proposed Project would reconfigure the Lynch Canyon Dam spillway to lower the crest by 2 to 3 feet and reduce reservoir capacity from 79 af to 47 af. There would be no large-scale long-term operational energy use under the Proposed Project as diversion would be accomplished using a siphon primed by a hand-operated diaphragm pump. Additionally, since proposed short-term construction activities would be limited in scale (i.e., over an area of approximately 2.5 acres) and duration (i.e., over a period of approximately two weeks), related energy consumption for the Proposed Project as a whole would not represent wasteful, inefficient, or unnecessary consumption. Therefore, there would be no impact.

- (b) ***Would the Proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?***

The Proposed Project does not include the development of buildings or structures that would create or use energy, and therefore the Proposed Project would not conflict with or obstruct state or local plans for renewable energy or energy efficiency. There would be no impact.

2.4 Greenhouse Gas Emissions

4. GREENHOUSE GAS EMISSIONS: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Generate greenhouse gas emission, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?			X	
(b) Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				X

2.4.1 Environmental setting

Greenhouse gases are gases that can absorb and emit infrared radiation, trapping energy in the atmosphere and causing it to warm. Greenhouse gases have impacts that are more global than regional and are different from air pollutants that impact the general area near where they are released. Greenhouse gases can occur naturally or be the direct result of human activities.

In January 2008, California Assembly Bill 32, the Global Warming Solutions Act of 2006, went into effect. This bill required the California Air Resources Board (CARB) to develop regulations to address global climate change due to greenhouse gas emissions. In December 2009, recommended regulatory guidance on the analysis and mitigation of greenhouse gases were adopted. Updated Statewide guidelines (Section 15064.4) were implemented on March 18, 2010 that require an agency “make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project” which may be done either through modeling or through reliance “on a qualitative analysis or performance based standards” (AEP 2014).

State law defines greenhouse gases to include the following emissions: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (Health and Safety Code, section 38505[g]). The most common greenhouse gas that results from human activity is carbon dioxide, followed by methane and nitrous oxide. A preliminary threshold of 7,000 metric tonnes² of CO₂ equivalent per year (7,716 tons per year) for operational emissions (excluding transportation), and performance standards for construction and transportation emissions has been

² A metric tonne (British), also called a “long ton,” represents 2,240 pounds. It is distinct from a “ton” (U.S. standard), also called a “short ton,” which represents 2,000 pounds.

proposed by CARB (CARB 2008). The BAAQMD has not adopted construction-related quantitative threshold values for greenhouse gas emissions (BAAQMD 2017).

There are no formal attainment concentration standards established by the federal or State government for greenhouse gases, although CARB has set the current 2020 greenhouse gas emission limit for California at 431 million metric tonnes of carbon dioxide equivalent (MMTCO_{2e}).

2.4.2 Findings

(a) *Would the project generate greenhouse gas emission, either directly or indirectly, that may have a significant impact on the environment?*

While the proposed short-term construction activities would generate greenhouse gases through construction equipment use, emissions would be limited in scale (i.e., over an area of approximately 2.5 acres) and duration (i.e., over a period of approximately two weeks) such that the emissions would also be limited to levels below the preliminary threshold for a significant impact on the environment, as proposed by CARB (2008). Additionally, long-term operation of the Proposed Project would not generate greenhouse gas emissions. Overall, the Proposed Project would have a less than significant impact due to short-term construction-related impacts.

(b) *Would the project conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

Construction of the Proposed Project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases because it would not change land use or transportation infrastructure. The Proposed Project would have no impact.

2.5 Hydrology and Water Quality

5. HYDROLOGY AND WATER QUALITY: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Would the change in water volume and/or the pattern of seasonal flows in the affected watercourse result in:				
(i) a significant cumulative reduction in the water supply downstream of the diversion?			X	
(ii) a significant reduction in water supply, either on an annual or seasonal basis, to senior water right holders downstream of the diversion?				X
(iii) a significant reduction in the available aquatic habitat or riparian habitat for native species of plants and animals?			X	
(iv) a significant change in seasonal water temperatures due to changes in the patterns of water flow in the stream?			X	
(b) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		X		
(c) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				X
(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 through the addition of impervious surfaces, in a manner that would:				
(i) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				X
(ii) create or contribute runoff water that would exceed the capacity of existing or planned stormwater discharge systems?				X
(iii) provide substantial additional sources of polluted runoff?				X
(iv) result in substantial erosion or siltation on- or off-site?				X (beneficial)
(v) impede or redirect flood flows				X (beneficial)
(e) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				X

2.5.1 Environmental setting

Solano County has a Mediterranean climate, characterized by mild winters and hot summers. Precipitation in the county occurs as rainfall, with the greatest levels typically occurring in winter (December–February) (see also Table 4). In the Lynch Canyon Open Space, soils possess low water holding capacity, hillslopes and drainage paths are typically steep (i.e., > 30 percent), and there is minimal floodplain storage until the most downstream reaches of the Unnamed Creek near Cordelia Slough (Stillwater Sciences 2009). Thus, runoff from storm events in the Proposed Project Area is likely to be flashy. Although there is no available streamflow data for Lynch Canyon, a nearby USGS streamflow gage, #11458350 at Tulucay Creek near the city of Napa, was used to estimate unimpaired streamflow for the water availability analysis (WAA) completed for this Proposed Project (Stillwater Sciences 2009, 2012). There is also a lack of available water quality data for Lynch Canyon; however, as the majority of the land use in the Proposed Project Area is grazing, there is potential for sediment, bacteria (coliform), and nutrient inputs to downstream locations.

2.5.2 Regulatory setting

Federal regulations

Section 404 of the Clean Water Act

The Clean Water Act (CWA) was enacted as an amendment to the federal Water Pollution Control Act of 1972, and outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA is the primary federal law protecting the quality of the nation's surface waters (e.g., lakes, rivers, and coastal wetlands). The CWA empowers the Environmental Protection Agency (USEPA) to set national water quality standards and effluent limitations and includes programs addressing both point-source and nonpoint-source pollution. Point-source pollution is pollution that originates or enters surface waters at a specific location (e.g., construction site), whereas a nonpoint-source pollution originates over a broader area (e.g., storm water runoff). All discharges into the nation's waters are illegal, unless specifically authorized by a permit. The following sections provide additional details on specific sections of the CWA.

Permits for Fill Placement in Waters and Wetlands (Section 404). CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States, which are oceans, bays, rivers, streams, lakes, ponds, and adjacent wetlands, including any or all of the following:

- Areas within the ordinary high water mark (OHWM) of a stream, including non-perennial intermittent streams with a defined bed and bank and any stream

channel that conveys natural runoff to traditional navigable waters, even if it has been realigned.

- Seasonal and perennial wetlands, including coastal wetlands, that are adjacent to jurisdictional waters.

On April 21, 2020, the USACE and USEPA published a new rule that went into effect June 22, 2020, *The Navigable Waters Protection Rule: Definition of “Waters of the United States”* and redefined the scope of waters federally regulated under the CWA (USACE and USEPA 2020). Based on this new rule, additional exclusions are described, including that the USACE does not have jurisdiction over nor regulates ephemeral features that only flow in direct response to precipitation or ditches that are not traditional navigable waters or tributaries, among other exclusions.

A permit must be obtained from the USACE, prior to proceeding with the proposed activity, for all discharges of dredged or fill material into waters of the United States, including adjacent wetlands. The USACE may issue either an individual permit evaluated on a case-by-case basis or a general permit evaluated at a program level for a series of related activities. General permits (e.g., nationwide permits [NWP] to cover fill activity) are preauthorized and are issued to cover multiple instances of similar activities expected to cause only minimal adverse environmental effects.

Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. The USACE cannot issue an individual permit or verify the use of a general permit until a water quality certification or a waiver of certification has been issued pursuant to CWA Section 401 and the requirements of the National Environmental Policy Act, ESA, and the National Historic Preservation Act have been met.

Permits for storm water discharge (Section 402)

CWA Section 402 regulates construction-related storm water discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. The State Water Board is authorized by the USEPA to oversee the NPDES program through the Regional Water Quality Control Boards (RWQCB). NPDES permits are required for projects that disturb more than 0.4 ha (1 ac) of land and requires the Applicants to file a public notice of intent to discharge storm water, and to prepare and implement a storm water pollution prevention plan (SWPPP).

Water quality certification (Section 401)

CWA Section 401 permit is required for activities that may result in the discharge of a pollutant into waters of the United States. Projects with a federal nexus that may affect state water quality (including those that require federal agency approval [e.g., Section 404 permit]) also must comply with CWA Section 401. A certification is required from the state in which the discharge would originate or, if appropriate, from the interstate

water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate.

State regulations

California Fish and Wildlife code

Section 1602—Lake and streambed alteration agreements

Section 1602 of the California Fish and Game Code requires notification to CDFW before implementing any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an existing wildlife or fish resource may be substantially adversely affected, CDFW is required to propose reasonable changes to the project to protect the resources. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project.

Porter-Cologne Water Quality Control Act

California Water Code Section 13260 requires any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements [WDRs]). Under the Porter-Cologne Water Quality Control Act definition, waters of the state are “any surface water or groundwater, including saline waters, within the boundaries of the state.” Additional guidance and definition of State wetlands is provided in the recent *State Wetland Definition and Procedures for Discharges of Dredged and Fill Material to Waters of the State* (SWRCB 2019). Although all waters of the United States that are within the borders of California are also waters of the state, the reverse is not true. Therefore, California retains authority to regulate discharges of waste into any waters of the state, regardless of whether the USACE has concurrent jurisdiction under CWA Section 404. If the USACE determines that a wetland is not subject to regulation under Section 404, CWA Section 401 water quality certification is not required. However, the RWQCB may impose WDRs if fill material is placed into waters of the state.

Regional policies and plans

Instream flows

The *Draft Guidelines for Maintaining Instream Flows to Protect Fisheries Resources Downstream of Water Diversions in Mid-California Coastal Streams* (2002 Draft Guidelines) (CDFG and NMFS 2002) and the adopted *Policy for Maintaining Instream Flows in Northern California Coastal Streams* (2014 Instream Flow Policy) (SWRCB

2014) establish principles and guidelines for maintaining instream flows for the protection of fishery resources, while minimizing water supply impacts on other beneficial uses, including irrigation, municipal use, and domestic use. However, the 2002 Draft Guidelines and/or 2014 Instream Flow Policy do not strictly apply to the Proposed Project since Solano County is outside of the covered geographic area. Despite this, they address habitat needs for special-status fish species (i.e., steelhead) relevant to the project, and provide useful benchmarks, particularly in the case of established thresholds for the water availability analysis (WAA) that was completed for this Proposed Project (Stillwater Sciences 2009, 2012). A benchmark used in the WAA that is recommended by the 2002 Draft Guidelines is the Cumulative Flow Impairment Index (CFII). This index is determined by dividing the sum of all diversions upstream of a POI that occur annually during October 1 through March 31 by the estimated volume of water available during a recommended supply season of December 15 through March 31. The 2002 Draft Guidelines state that adequate spawning flows are generally maintained when the natural volume of winter runoff is impaired by less than 10%. The CFII is used to evaluate this condition; if the CFII is less than 10% at locations within anadromy, then significant cumulative impacts are unlikely.

Basin Plan

The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) sets forth designated beneficial uses for water and narrative and numerical water quality objectives for a variety of constituents including bacteria, biostimulatory substances (i.e., nutrients), floating material, oil and grease, color, dissolved oxygen, pH, radionuclides, salinity, suspended sediment load, settleable material, suspended material, dissolved sulfides, taste-and-odor producing substances, water temperature, toxicity, turbidity, un-ionized ammonia, and other specific chemicals. The Basin Plan also addresses bioaccumulation and population and community ecology (SFBRWQCB 2011).

2.5.3 Findings

(a) (i) *Would the change in water volume and/or the pattern of seasonal flows in the affected watercourse result in a significant cumulative reduction in the water supply downstream of the diversion?*

Because the Proposed Project involves seasonal diversion (October 1 to June 1) of up to 47 af from the North Fork of Lynch Canyon Creek and storage of the diverted water in an existing on-stream reservoir, it would change the water volumes and pattern of seasonal flows at the POD (Figure 8) and downstream. A Water Availability Analysis (WAA) for the Proposed Project was conducted by Stillwater Sciences in coordination with CDFW and Division of Water Rights in 2008–2009. The WAA assessed annual, supply season, and diversion season unimpaired flows at three POIs located along the flow path between the Proposed Project's POD and Cordelia Slough (Figure 8). The WAA was amended in 2012, as requested by the Division of Water Rights, to include a

fourth POI at the downstream limit of anadromy (LOA) (Stillwater Sciences 2012). The LOA was determined in coordination with CDFW. The LOA is located just downstream of the confluence of the north and south forks of Lynch Canyon Creek, which is downstream of the POD and upstream of POI #2 (Stillwater Sciences 2009).

The calculated CFII values at the POD and LOA are 14.6% and 4.7%, respectively (Table 3). Because the proposed diversion season (October 1 to June 1) extends beyond the supply season recommended in the 2002 Draft Guidelines (December 15 to March 31), the timing of anticipated reservoir storage patterns was analyzed to determine at what point in the season the reservoir would reach storage capacity and begin to spill, allowing subsequent inflow to move through the reservoir and into the downstream meadow. Available precipitation data (1998-2010) from the nearby Napa County Airport (KAPC) was used to calculate monthly average runoff estimates with the Rainfall-Runoff Method, also referred to as the Rational Method (Table 4). Monthly average estimates of consumptive use, including evaporation (1.5-4 af) and a small amount of livestock water consumption (0.21-0.23 af), were combined with runoff estimates to indicate net monthly changes in reservoir volume (Table 5). Results suggest that given the relatively low storage capacity (47 af) of the proposed reservoir, it would reach 100 percent capacity very early in the diversion season (i.e., by December; see Table 5 and Figure 9).

Further, the Proposed Project is designed such that water from the unnamed source stream (known locally as the North Fork of Lynch Canyon Creek) would not be diverted to storage in Lynch Canyon Reservoir outside of the proposed diversion season (October 1 to June 1).

Overall, the results of the WAA indicate that the Proposed Project would not dewater the stream reach upstream of the LOA during the supply season, as recommended for on-stream reservoirs (CDFG and NMFS 2002). Additionally, since the calculated CFII value at the LOA is less than 10%, the Proposed Project would result in a less than significant cumulative reduction in the unimpaired water supply at or downstream of the LOA during the recommended supply season (CDFG and NMFS 2002).

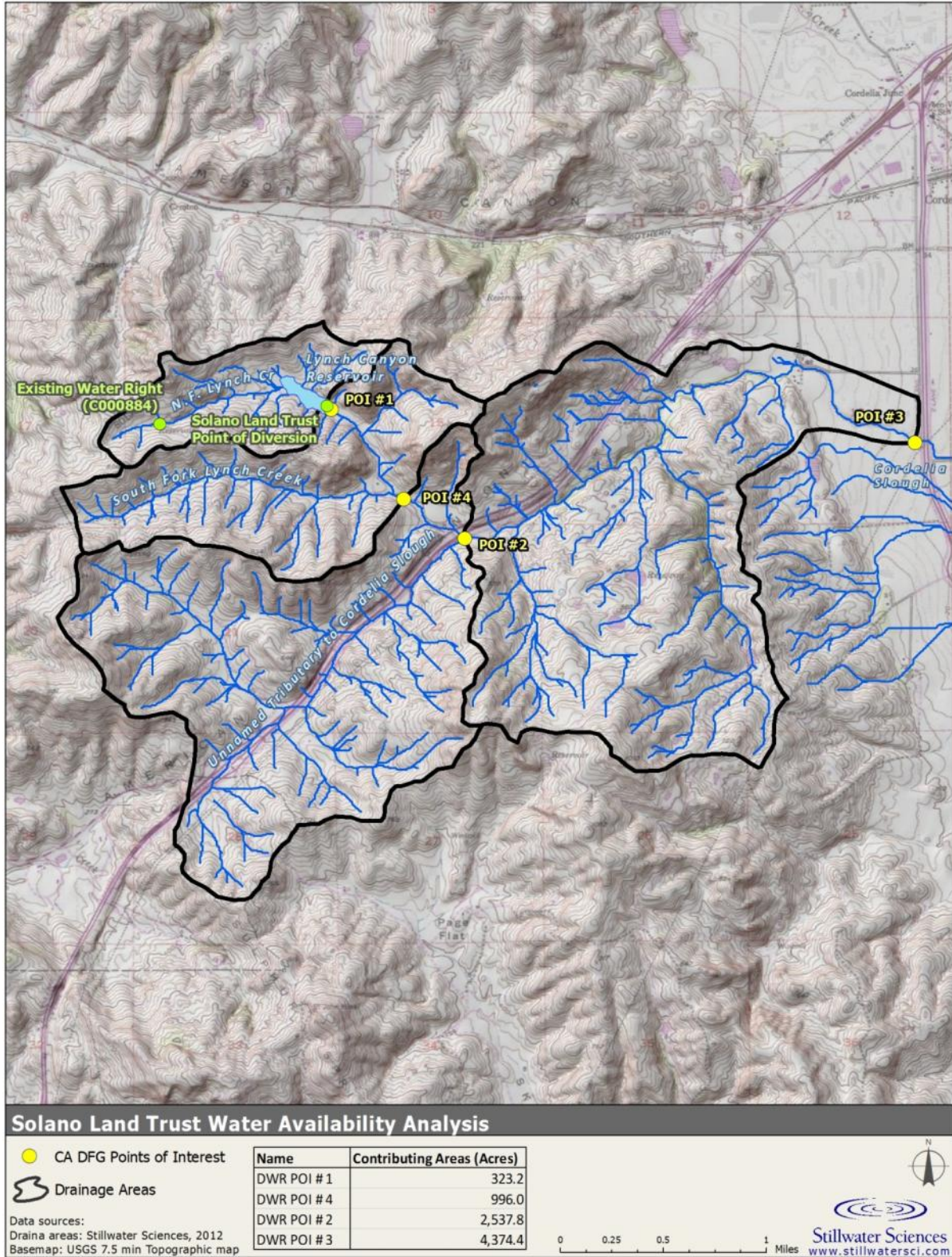


Figure 8. Lynch Canyon Reservoir Water Availability Analysis (WAA) Point of Diversion (POD) and Points of Interest (POIs), including the Limit of Anadromy (POI #4).

Table 3. Summary of Water Availability Analysis (WAA) CFII results.

POI	Description	Designated stream class	Unimpaired flow during the supply season (15 December to 31 March) Q _{POI} (af/yr)	Cumulative Flow Impairment Index (CFII) % for diversion of 47-af/yr
1 ^a	Point of Diversion (POD) - Lynch Canyon Dam on North Fork of Lynch Canyon Creek	II	330.4	14.6
2 ^a	At the confluence of Lynch Canyon Creek with the unnamed tributary to Cordelia Slough	I	2,594.1	1.9
3 ^a	Cordelia Slough just upstream of the crossing under Highway 680 and upstream of the confluence with Suisun Slough	I	4,471.4	1.1
4 ^b	Limit of Anadromy (LOA) - just downstream of the confluence of the north and south forks of Lynch Canyon Creek, in between POI 1 and POI 2	I	1,018.0	4.7

^a Data from Stillwater Sciences (2009)

^b Data from Stillwater Sciences (2012)

Table 4. Lynch Canyon Reservoir average monthly dew point, air temperature, and precipitation for the period 1998–2011.

Parameter ¹	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Annual
Average monthly dew point (°C) ¹	4.9	5.7	6.7	6.9	9.1	10.8	12.3	12.2	10.6	7.9	6.5	4.5	-
Average monthly temperature (°C) ²	7.9	9.5	11.1	12.0	15.2	17.8	18.8	18.9	18.2	14.9	10.9	7.9	-
Average monthly precipitation (in) ²	3.4	4.2	1.9	1.2	0.7	0.07	0.00	0.02	0.05	1.1	2.0	4.1	18.8

¹ Data from Napa County Airport (1998–2011) <http://www.wrcc.dri.edu/htmlfiles/>

² Data from Napa County Airport (1998–2010) <http://www.wrcc.dri.edu/htmlfiles/>

Table 5. Lynch Canyon Reservoir estimated monthly consumptive use, rainfall, volume, and percent of monthly storage capacity for the Proposed Project.

Month	Days	Reservoir initial volume (af) ¹	Reservoir initial volume (%) ¹	T _m [C] ²	E [mm/day] ³	Monthly evaporation (af)	Monthly consumption by cattle (af) ⁴	Monthly average rainfall (ft)	Q (af/month) ⁵	Net added reservoir volume (af) ⁶	Reservoir ending volume (af)	Reservoir volume remaining (%)	Volume spilled by reservoir (af)	Volume diverted to storage (af)
April	30	47.0	100%	12.68	3.23	2.4	0.22	0.1008	17.9	15.3	47.0	100%	15.3	0.0
May	31	47.0	100%	15.90	4.19	3.2	0.23	0.0550	9.8	6.4	47.0	100%	6.4	0.0
June	30	47.0	100%	18.51	5.07	3.7	0.22	0.0058	1.0	-3.9	43.1	92%	0.0	0.0
July	31	43.1	92%	19.45	5.19	4.0	0.23	0.0000	0.0	-4.2	38.9	83%	0.0	0.0
August	31	38.9	83%	19.57	5.26	4.0	0.23	0.0017	0.3	-4.2	34.6	74%	0.0	0.0
September	30	34.6	74%	18.90	5.31	3.9	0.22	0.0042	0.7	-4.1	30.5	65%	0.0	0.0
October	31	30.5	65%	15.62	4.35	3.3	0.23	0.0900	16.0	12.5	43.0	91%	0.0	12.5
November	30	43.0	91%	11.57	2.85	2.1	0.22	0.1700	30.2	27.9	47.0	100%	23.9	4.0
December	31	47.0	100%	8.57	2.05	1.6	0.23	0.3450	61.3	59.5	47.0	100%	59.5	0.0
January	31	47.0	100%	8.57	1.97	1.5	0.23	0.2850	50.7	49.0	47.0	100%	49.0	0.0
February	28	47.0	100%	10.18	2.45	1.7	0.21	0.3492	62.1	60.2	47.0	100%	60.2	0.0
March	31	47.0	100%	11.73	2.87	2.2	0.23	0.1583	28.1	25.7	47.0	100%	25.7	0.0

¹ Assumes reservoir is full by April 30 of every year and takes the ending reservoir volume of the previous month thereafter.

² T_m = Average monthly temperature + $0.006 \times elevation$. The elevation of the Proposed Project is assumed to be 113 m (317 ft) above sea level.

³ Daily evaporation is $E = \frac{700T_m / (100 - A) + 15(T - T_d)}{(80 - T)}$, where A = 38.194503 degrees latitude and T_d = average monthly dewpoint from Table 4. Values given by this formula typically differ from measured values by approximately 0.5 mm day^{-1} for monthly means (Linacre 1977).

⁴ Assumes reservoir surface area of 7.5 acres.

⁵ Assumes 120 head of cattle for water consumption \times 20 gallons per day/cow = 2,400 gallons per day consumed by cattle

⁶ Stream flow determined using the rational method $Q = \text{Coefficient of Runoff} \times \text{Monthly Average Precipitation} \times \text{Watershed Area}$, where the coefficient of runoff (C) = 0.55 and the watershed area = 323.2 acres (Stillwater Sciences 2008, 2012).

⁷ Determined by Monthly Stream Flow – Monthly Evaporation – Monthly Consumption by Cattle

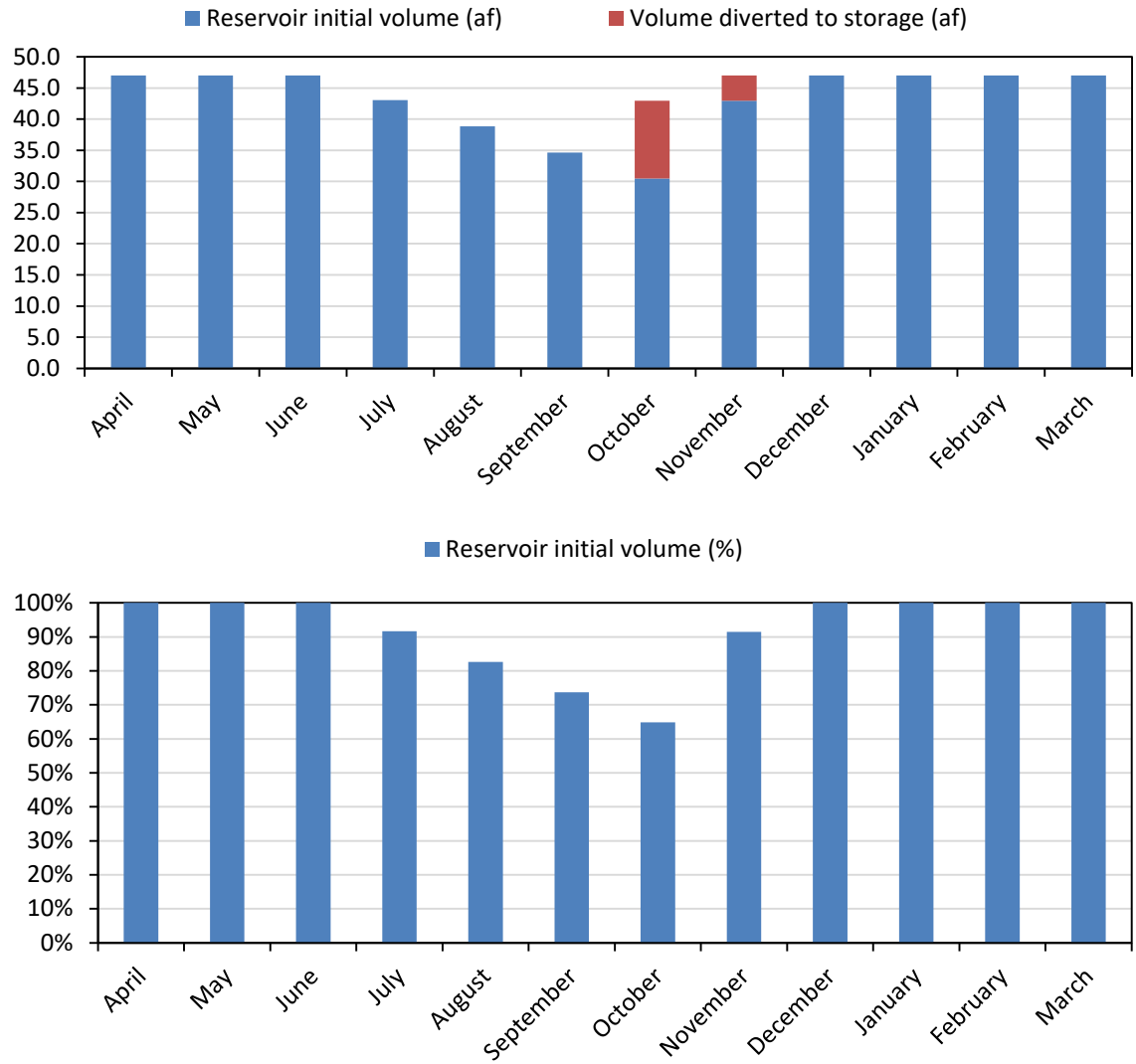


Figure 9. Lynch Canyon Reservoir estimated monthly initial volume (af shown on top, % shown on bottom) and volume diverted to storage (top) for the Proposed Project. Outside of the diversion season, inflows to the reservoir would be released to the downstream meadow.

(a) (ii) Would the change in water volume and/or the pattern of seasonal flows in the affected watercourse result in a significant reduction in water supply, either on an annual or seasonal basis, to senior water right holders downstream of the diversion?

There are no senior water right holders downstream of the POD. There would be no impact.

(a) (iii) Would the change in water volume and/or the pattern of seasonal flows in the affected watercourse result in a significant reduction in the available aquatic habitat or riparian habitat for native species of plants and animals?

As discussed in Section 2.5.3 a(i), the cumulative reduction in the unimpaired water supply during the supply season would be less than significant.

The WAA also evaluated the unimpaired February median flow at the POD as 0.47 cfs (Stillwater Sciences 2009). During the diversion season, a bypass flow equal to the unimpaired February median flow can be used where needed to protect fish habitat (CDFG and NMFS 2002). However, an appropriate bypass flow is developed on a case-by-case basis. Based on anticipated reservoir storage patterns (see discussion under a(ii)) and the primarily non-consumptive use of the reservoir, and consistent with CDFW's determination that a diversion season bypass flow would not provide a significant benefit to downstream resources and thus would not be necessary (Stillwater Sciences 2013), the Proposed Project would have a less than significant impact on available aquatic and riparian habitat for native species.

(a) (iv) Would the change in water volume and/or the pattern of seasonal flows in the affected watercourse result in a significant change in seasonal water temperatures due to changes in the patterns of water flow in the stream?

The small differences in the volume and/or pattern of seasonal flows compared with unimpaired conditions would be unlikely to result in increased water temperatures downstream of the POD or the LOA. This is because water would move as sheet flow or shallow groundwater flow through the meadow located between the POD and the culvert where the creek daylighted and, subsequently, through a shaded riparian scrub-shrub forest along the North Fork of Lynch Canyon Creek between the culvert and the LOA (Stillwater Sciences 2008). Groundwater flow in the meadow and consistent riparian shading would help to maintain cool temperatures between the POD and the LOA, such that there would be a less than significant impact on water temperatures both during the diversion season and outside of the diversion season.

(b) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

There are no waste discharge requirements associated with the Proposed Project. In the long-term, active open-range, low-density livestock grazing and use of Lynch Canyon Reservoir as a water source for cattle would continue year-round in the Proposed Project Area as part of the Proposed Project. If portions of the existing cattle exclusion fencing (Figure 10) should fail, this could result in violations of water quality standards by increasing sediment, bacteria (coliform), and nutrient inputs to downstream locations relative to existing conditions. This would be a significant impact.

Implementation of Mitigation Measure WQ-1, substantially as written, in any permit issued pursuant to water right application 30949, would ensure that cattle would be excluded from the reservoir and associated stream channels, with the exception of an area along the southwest shoreline (see Section 2.6.5), and would decrease the potential for bank erosion and decrease the direct inputs of nutrients and bacteria to these water bodies, thereby reducing potential long-term impacts on surface and ground water quality to a less than significant level. As discussed in Section 2.6.5, the existing area of fringe emergent wetland habitat that is directly impacted by cattle accessing the reservoir at the southern end of the dam for drinking water is 0.204 acres, whereas the area of fringe emergent wetlands along the southwest shoreline of the reservoir that would be directly impacted under the Proposed Project (i.e., the new access point for cattle) would be less (0.035 to 0.048 acres).

Mitigation Measure WQ-1 – Maintain Existing Livestock Exclusion Fencing:
Maintain the existing livestock exclusion fencing around the reservoir and associated stream channels as shown in Figure 10 of the Lynch Canyon Reservoir Initial Study/Mitigated Negative Declaration, as modified by the Proposed Project, where the modifications would decrease the extent of fringe emergent wetland area within the reservoir that would be directly impacted by cattle relative to existing conditions. No new ground disturbing activities shall occur within the existing or modified livestock exclusion fencing area. Equipment access within the livestock exclusion fencing area shall be limited to activities necessary for the ongoing operation of the reservoir and shall incorporate best management practices to minimize disturbance to water, soils, and vegetation. Natural vegetation shall be preserved and protected within the livestock exclusion fencing area. Planting of native vegetation within the livestock exclusion fencing area is allowed.

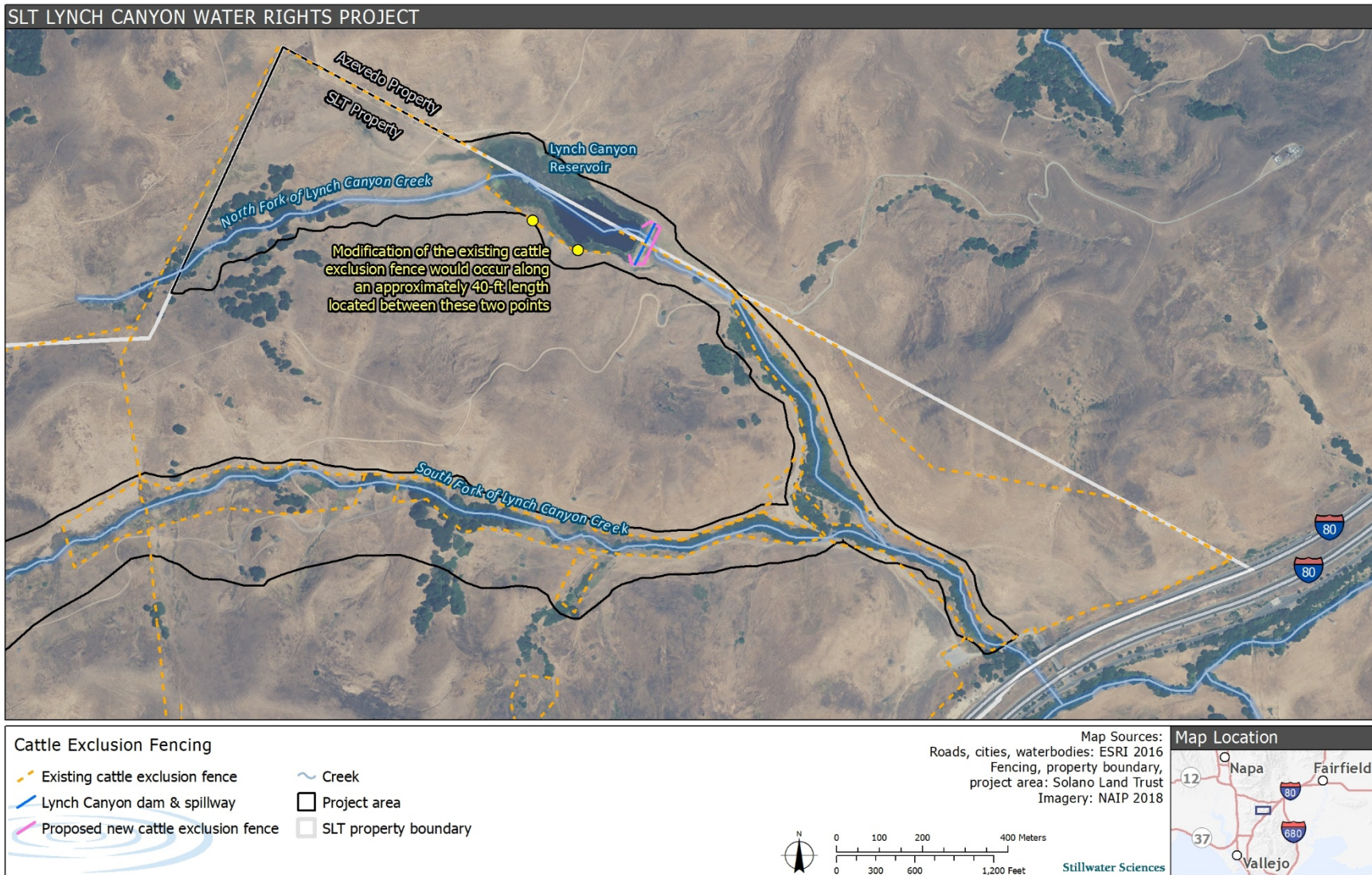


Figure 10. Existing and Proposed Project cattle exclusion fencing.

Emergency spillway repairs conducted in November 2006 could have resulted in potential short-term erosion-related impacts to water quality downstream of Lynch Canyon Dam. In a letter dated June 29, 2006, Jim Lowe of the State Division of Safety of Dams (DSOD) requested that Solano Land Trust perform emergency spillway repairs on the Lynch Canyon Dam based on observations made during a periodic dam inspection. The spillway had severe erosion and DSOD recommended that the dam control section and left spillway bank be stabilized with rock or other means. DSOD considered the work exempt from CEQA because of its emergency nature (personal communication between Russell Bowlus of DSOD and Sue Wickham of SLT October 2013).

In accordance with the DSOD-approved plans, the spillway repair work was undertaken November 9 and 10, 2006 (Figure 11). The Proposed Project included re-contouring the spillway outlet from the dam crest to the base, lining the excavated area with construction fabric, and placing 12- to 24-inch rip-rap within the spillway outlet and sides. The following best management practices were followed to minimize disturbance to water, soils, and vegetation in the construction area:

- Construction was completed during the dry season to reduce erosion within the construction footprint and to minimize the impacts of trucks entering the vicinity of the reservoir.
- Trucks were parked outside of the construction footprint and moist soil areas.
- Construction activities were monitored at all times by engineering and Solano Land Trust staff.
- DSOD inspected the work at the completion of construction.

Given the adherence to the above best management practices, potential short-term construction-related impacts to water quality from the emergency spillway repairs would have been less than significant.

Ground disturbance related to the proposed construction activities may cause accelerated erosion and sedimentation within the Construction Footprint, which may result in exceedance of applicable water quality standards. This would be a significant impact. Implementation of Mitigation Measure GS-1 *Erosion and Sediment Control Plan*, Mitigation Measure GS-2 *Construction Debris Control*, and Mitigation Measure GS-3 *Regulatory Compliance* would reduce this impact to a less than significant level.

Use of heavy equipment could result in the accidental release of fuels, oils, lubricants, or other fluids into wetland areas or waterways within or adjacent to the Construction Footprint that may cause exceedances of applicable water quality standards. This would be a significant impact. Including the Mitigation Measure WQ-2, substantially as written, in any permit issued pursuant to water

right application 30949, would reduce potential impacts on water quality to a less than significant level.



Figure 11. Emergency spillway repairs conducted at Lynch Canyon Reservoir in November 2006.

Mitigation Measure WQ-2 – Construction Pollution Control: No fuels, oil, lubricants, or other fluids related to the use of construction equipment will be allowed to enter into or be placed where they may be washed by rainfall runoff into the waters of the State. Additionally, the following shall be adhered to within the Construction Footprint:

- *Vehicles and equipment will be kept in good repair, without leaks of hydraulic or lubricating fluids. If such leaks or drips occur, they shall be cleaned up immediately. Drip pans shall be utilized when vehicles are parked. Equipment maintenance and/or repair will be confined to one location.*
- *Equipment shall be stored, when not in use, in upland areas well away from designated wetland areas and waterways.*
- *Service and refueling procedures will be conducted where there is no potential for fuel spills to seep or wash into wetland areas or waterways and extreme caution will be used when handling and or storing chemicals (e.g., fuel) near wetland areas or waterways.*
- *When operations are completed, any excess fuels, oils, lubricants, or other fluids related to the use of construction equipment shall be removed from the work area.*

(c) *Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

No groundwater withdrawals would occur due to the Proposed Project. Decreasing the size of Lynch Canyon Reservoir from 79 af to 47 af would not interfere substantially with groundwater recharge such that the Proposed Project would impede sustainable groundwater management of the basin as there are no nearby groundwater wells that would be affected (see also discussion in Section 2.6.5). There would be no impact.

(d) (i) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface runoff and would result in flooding on- or off-site?*

The Proposed Project would not add impervious surfaces. The Proposed Project would alter the existing drainage pattern of the Proposed Project Area by decreasing the storage capacity of the existing unpermitted reservoir and increasing flows to reaches downstream of the POD. In particular, flows would increase to the meadow immediately downstream of the POD. However, these flows would be attenuated in the large meadow immediately downstream of the Lynch Canyon Dam. As part of the Proposed Project, flow dissipation structures would more evenly spread spillway releases across the meadow during periods when the reservoir is spilling, minimizing the potential for on-site and off-site flooding. Outside of the diversion season, siphon releases also would be dissipated into the meadow. There would be no impact.

(d) (ii) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater discharge systems?*

The Proposed Project would not add impervious surfaces. The Proposed Project would alter the existing drainage pattern of the Proposed Project Area by decreasing the storage capacity of the existing unpermitted reservoir and increasing flows to reaches downstream of the POD. In particular, flows would increase to the meadow immediately downstream of the POD. The Proposed Project is located in an undeveloped open space property that is used for agriculture (livestock grazing) and there are no nearby existing or planned stormwater discharge systems. Other than the retrofitted spillway, no structural development is planned with the Proposed Project. There would be no impact.

(d) (iii) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or*

river, or through the addition of impervious surfaces, in a manner that would provide substantial additional sources of polluted runoff?

The Proposed Project would not add impervious surfaces. The Proposed Project would alter the existing drainage pattern of the Proposed Project Area by decreasing the storage capacity of the existing unpermitted reservoir and increasing flows to reaches downstream of the POD. In particular, flows would increase to the meadow immediately downstream of the POD. There would be no additional sources of polluted runoff due to the change in the existing drainage pattern, thus there would be no impact. For a discussion of the potential for construction-related pollutants, please refer to Section 2.1.2 (b) and Section 2.5.3 (b).

(d) (iv) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation on- or off-site?

The Proposed Project would not add impervious surfaces. The Proposed Project would alter the existing drainage pattern of the Proposed Project Area by decreasing the storage capacity of the existing unpermitted reservoir and increasing flows to reaches downstream of the POD. In particular, flows would increase to the meadow immediately downstream of the POD. Under existing conditions, spillway overflow turns north after leaving the spillway and moves as surface flow directly across the meadow to the fence-line running down the middle of the meadow. Once surface water hits the fence-line, it turns east and runs along the fence-line toward the culvert at the downstream end of the meadow. Thus, under existing conditions, surface water short-circuits much of the meadow (R. Azevedo, pers. comm., as cited in Stillwater Sciences 2013).

During the diversion season, a reduction in current diversions would result in increasing flows to the meadow, which could result in erosion in the channelized areas running toward or along the fence-line. To avoid further channelization of flows between the spillway and the culvert at the upstream end of the North Fork of Lynch Canyon Creek, CDFW has requested, and the Applicants have agreed to, a modification in the existing spillway to reduce flow velocities and dissipate water into the meadow. Consequently, the spillway would be lined with rip-rap and a small stilling pool would be placed at its base to facilitate gentle surface flow and shallow groundwater flow into the meadow. In addition, the Proposed Project would direct some of the spillway flow towards the south-east portion of the meadow by constructing a 0.6 m (2 ft) high berm along the north side of the spillway channel, downstream of the stilling basin to divert spillway flow easterly into the meadow; this includes installing two J-Hook rock weirs across the lower portion of the channel to slow and diffuse the water as it flows into the meadow (Figure 4b). This would more evenly spread flows across the meadow during periods when the reservoir is spilling, decrease the potential for erosion, and support meadow ecosystem functions such as nutrient uptake and flood

attenuation. Outside of the diversion season, siphon releases would also be dissipated into the meadow (see discussion under a(i)).

As part of the Proposed Project, flow dissipation structures would reduce the potential for substantial erosion or siltation on- or off-site relative to existing conditions and would be beneficial.

(d) (v) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would impede or redirect flood flows?*

The Proposed Project would not add impervious surfaces. The existing unpermitted 79-af reservoir does not provide flood control for downstream areas and thus does not impede flood flows under existing conditions. The Proposed Project would alter the existing drainage pattern of the Proposed Project Area by decreasing the storage capacity of the existing unpermitted reservoir and increasing flows to reaches downstream of the POD. In particular, flows would increase to the meadow immediately downstream of the POD. This would be a redirection of flood flows since under existing conditions, surface water short-circuits much of the meadow (R. Azevedo, pers. comm., as cited in Stillwater Sciences 2013). However, the Proposed Project would more evenly spread flows across the meadow during periods when the reservoir is spilling and would thus be beneficial. Outside of the diversion season, siphon releases would also be dissipated into the meadow in a more even manner (see discussion under a(i)), which would also be beneficial.

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

According to the Solano County General Plan (DRM 2008) 100-year floodplain zone map, the Proposed Project is not located within a 100-year floodplain hazard zone. The Proposed Project is not located in an area susceptible to inundation from seiche, and it is also located outside of the Sacramento-San Joaquin Delta area designated as potentially at risk from a tsunami (DRM 2008). There would be no impact.

2.6 Biological Resources

6. BIOLOGICAL RESOURCES: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
(i) Have a substantial increase or threat from invasive, non-native plants and wildlife?		X		
(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?		X		
(c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
(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?			X	
(e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
(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?			X	

2.6.1 Environmental setting

The Proposed Project is located in an area of undeveloped open space property that is used for agriculture (livestock grazing) and includes a man-made, existing, unpermitted reservoir on the North Fork of Lynch Canyon Creek. The 79-af Lynch Canyon Reservoir was created in 1960 and historically and currently provides water for cattle grazing. Fish (bluegill and bass) were historically stocked in the reservoir. Identification of baseline

conditions for land cover and plants, wildlife, and fish that may be in the Proposed Project Area relies upon available information, including data presented in a biological and cultural evaluation of the Proposed Project Area (Stillwater Sciences 2012). The methodology and results of the prior analysis are detailed in Section 2.6.2 *Land Cover Types* and Section 2.6.3 *Special-status Species*. The existing regulatory setting is provided in Section 2.6.4 *Regulatory Setting*, and Proposed Project potential impacts on biological resources are detailed in Section 2.6.5 *Findings*.

2.6.2 Land cover types

Lynch Canyon Open Space is dominated by non-native grasslands and ruderal herbaceous vegetation, with riparian trees and shrubs present in lowland, protected drainages. In addition, there are small patches of native grasses occurring on low and north facing slopes, small oak groves scattered throughout the Proposed Project Area, and pockets of freshwater emergent marsh along the periphery of the reservoir (RMI 1998, Stillwater Sciences 2008). Each of these land types and its associated wildlife species is discussed below.

Non-wetland vegetation types

Non-native grasslands

Non-native grassland habitat dominates the Proposed Project Area. Dominant plant species include wild oat (*Avena* spp.), ripgut brome (*Bromus diandrus*), low barley (*Hordeum depressum*), annual bluegrass (*Poa annua*), Italian ryegrass (*Festuca perennis*), soft brome (*Bromus hordeaceus*), and rat-tail fescue (*Vulpia myuros*). Various associated native and non-native forb species include California burclover (*Medicago polymorpha*), bristly ox-tongue (*Picris echioides*), and cranesbill (*Geranium dissectum*). The vegetation type is most similar to the *Avena (barbata, fatua)* Semi-Natural Herbaceous Stands described in the Manual of California Vegetation (Sawyer et al. 2009) and valley and foothill grasslands described by Holland (1986); however, it is distinguished from the ruderal herbaceous vegetation type due to the low abundance of non-native forb species. Patches of native grasses occur within the non-native grasslands, but these did not comprise a large enough area to be considered as a separate vegetation type. Native grass species include purple needle grass (*Stipa pulchra*) and meadow barley (*Hordeum brachyantherum*), which are scattered in the lower portions of the Proposed Project Area, and beardless wild rye (*Elymus triticoides*) which occurs in sizeable stands in the fenced area on the banks above Lynch Canyon Creek. Grasslands provide foraging opportunities for many smaller species (e.g., lizards, snakes, small mammals) which, in turn, provide forage for raptors and other birds of prey.

Ruderal herbaceous

Along the eastern side of the North Fork of Lynch Canyon Creek, the vegetation consists of a mixture of non-native annual grasses and forbs. This area is more diverse than the nearby non-native grasslands and is dominated by spreading rush (*Juncus patens*), Italian ryegrass, soft brome, curly dock (*Rumex crispus*), clover (*Trifolium* sp.), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), oat, Italian thistle (*Carduus pycnocephalus*), radish (*Raphanus sativa*), black mustard (*Brassica nigra*), bindweed (*Convolvulus arvensis*), and garden vetch (*Vicia sativa*). This vegetation type includes a high cover of non-native invasive species: star thistle (*Centaurea calcitrapa*); yellow star thistle (*Centaurea solstitialis*); black mustard (*Brassica nigra*); Italian thistle (*Carduus pycnocephalus*); milk thistle (*Silybum marianum*); and artichoke thistle (*Cynara cardunculus*) (RMI 1998). In addition, this area includes a few revegetation plantings, predominantly valley oak. The vegetation type is most similar to the *Avena (barbata, fatua)* Semi-Natural Herbaceous Stands described in the Manual of California Vegetation (Sawyer et al. 2009) and valley and foothill grasslands described by Holland (1986).

Oak woodlands

There are a few small upland oak groves in the Proposed Project Area, however most oaks (*Quercus* spp.) are associated with the riparian forest. Oak woodlands are dominated by coast live oak (*Quercus agrifolia*) and stand structure is open to dense. Buckeye (*Aesculus californica*) and an understory of annual grasses, herb, and low shrubs occur in and around the groves. The vegetation type is most similar to the *Quercus agrifolia* Woodland Alliance described in the Manual of California Vegetation (Sawyer et al. 2009) and Coast live oak woodland described by Holland (1986). The groves likely provide valuable habitat for birds, reptiles, and small mammals, as well as refuge for larger mammals such as deer and coyote.

Wetlands and other waters

Forty-three percent of the Proposed Project Area (17.6 ha [43.5 ac]) is classified as wetlands or other waters of the United States, potentially subject to the jurisdiction of the USACE. This acreage includes areas along the North Fork of Lynch Canyon Creek, the Lynch Canyon Reservoir fringe, and the area directly downstream of the reservoir prior to the source of the North Fork of Lynch Canyon Creek. Lynch Canyon Reservoir and the North Fork of Lynch Canyon Creek below the ordinary high water mark (OHWM) are potential jurisdictional waters of the United States. The portion of the North Fork of Lynch Canyon Creek above OHWM (riparian scrub-shrub forest and associated wetlands), the Lynch Canyon Reservoir fringe (freshwater emergent marsh), and the area directly downstream of the Lynch Canyon Reservoir prior to the source of the North Fork of Lynch Canyon Creek (freshwater emergent marsh) are all potentially jurisdictional wetlands (33% of the Proposed Project Area, 13.4 ha [33.1 ac]).

Riparian forest and associated wetlands

The vegetation along the North Fork of Lynch Canyon Creek is a mosaic of mixed riparian forest with intermittent patches of open scrub-shrub habitat and is characterized as riparian scrub-shrub. The riparian forest overstory is dominated by coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), California bay (*Umbellularia californica*), California buckeye (*Aesculus californica*), and California black walnut (*Juglans hindsii*). Scrub-shrub patches include coyote brush (*Baccharis pilularis*), California coffeeberry (*Frangula californica*), poison oak (*Toxicodendron diversilobum*), wild rose (*Rosa californica*), and cultivated plum (*Prunus* sp.). Herbaceous vegetation and graminoids occur in the understory, including wild oat (*Avena* sp.), California figwort (*Scrophularia californica*), and California man-root (*Marah fabaceus*). The vegetation type is most similar to with the *Quercus agrifolia* Woodland Alliance described in the Manual of California Vegetation (Sawyer et al. 2009) and riparian forests described by Holland (1986).

A small portion of the Proposed Project Area along the North Fork of Lynch Canyon Creek is riparian herbaceous vegetation dominated by hydrophytic plants such as horsetail (*Equisetum* sp.), bulrush (*Schoenoplectus americanus*), Himalayan blackberry (*Rubus armeniacus*), and cattails (*Typha* spp.). This vegetation type is found along the creek bottom in gaps within the riparian scrub-shrub forest and is bound by the steeper gradient on both sides of the creek bed as well as the riparian forest overstory. The vegetation type is most similar to the *Schoenoplectus americanus* Herbaceous Alliance described in the Manual of California Vegetation (Sawyer et al. 2009) and marsh and swamp described by Holland (1986). Riparian woodlands provide water, favorable microclimates, and important movement corridors. Emergent freshwater marsh offers high-quality nesting, foraging, and roosting habitat, as well as cover.

Freshwater emergent marsh

Dominant plant species in this vegetation type include bulrush, spreading rush, irisleaf rush (*Juncus xiphioides*), curly dock, and soft brome. Plant associates include widespread species such as black mustard and cranesbill, as well as unidentified grasses (not in flower). This vegetation type is very similar to the riparian herbaceous vegetation and is most similar to the *Schoenoplectus americanus* Herbaceous Alliance described in the Manual of California Vegetation (Sawyer et al. 2009) and marsh and swamp described by Holland (1986); however the emergent herbaceous vegetation found along the Lynch Canyon Reservoir is more diverse than the riparian herbaceous scrub zone found within the North Fork of Lynch Canyon Creek.

Lynch Canyon Reservoir

The 79-af Lynch Canyon Reservoir is located on the North Fork of Lynch Canyon Creek along the easterly property line of Lynch Canyon Open Space (Figure 1). The reservoir was created by construction of a small, non-permitted dam in 1960. The present, approximately 15-ft earthen dam was constructed in the late 1970's. The primary use of the reservoir is to provide year-round cattle stock water, although the reservoir has been

stocked in the past with bluegill and bass for recreational fishing. Open water areas of the reservoir support a variety of bird and bat species that feed on insects that they catch in flight.

North Fork of Lynch Canyon Creek

The North Fork of Lynch Canyon Creek is defined as a Class II stream (Figures 1 and 3) (SWRCB 2010). Habitat is present for aquatic non-fish vertebrates and aquatic benthic macroinvertebrates. Fish are not known to be currently present in the North Fork of Lynch Canyon Creek and Stillwater Sciences was not able to find any historical surveys that would support the presence of anadromous fish (or lack thereof) in the North Fork of Lynch Canyon Creek. The North Fork of Lynch Canyon Creek is a shallow stream with a narrow riparian corridor that supports aquatic plants and hydric soils.

2.6.3 Special-status species

Special-status species are plants and animals that are legally protected under the CESA, the ESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. Special status species are defined as species that are of management concern to the state and/or federal resource agencies, and including those species that are:

- Listed as endangered, threatened, or candidate for listing under the Federal Endangered Species Act (FESA);
- Listed as endangered, threatened, rare, or proposed for listing, under the California Endangered Species Act (CESA);
- Designated as endangered or rare, pursuant to California Fish and Game Code (Section 1901);
- Designated as fully protected, pursuant to California Fish and Game Code (Section 3511, Section 4700, or Section 5050);
- Designated as species of special concern by CDFW; and
- Plants or animals that meet the definitions of rare, threatened, or endangered under the California Environmental Quality Act (CEQA), including plants listed by CNPS to be “rare, threatened, or endangered in California” (Lists 1A, 1B, and 2). Local or regional agencies may consider plant species that CNPS believes require additional information (List 3) and plant species that have been placed on a watch list (List 4) by CNPS.

A list of special-status species with the potential to be in the Proposed Project Area and affected by the Proposed Project activities was identified by (1) obtaining a list of special-status plant and wildlife species based on database queries within an 8 km (5

mi) buffer of the Proposed Project Area boundaries, (b) incorporating special-status plants observed during a 2012 botanical surveys within the Construction Footprint, and (3) including special-status fish species documented the North Fork of Lynch Canyon Creek and listed fish species and designated critical habitat within the Cordelia, California USGS 7.5 minute topographic quadrangle. A fisheries assessment was also conducted to (1) identify historical or contemporary evidence that supports a determination of the upper limit of steelhead (*Oncorhynchus mykiss*) anadromy on Lynch Canyon Creek, and (2) determine the stream classification for Lynch Canyon Creek, as described in the “*Policy for Maintaining Instream Flows for Northern California Coastal Streams*” (Division 2010). In addition, an evaluation of suitable habitat for the USFWS and NMFS listed species present within the Proposed Project Area and overlap with designated critical habitat was conducted to identify potential impacts. The methods used to evaluate each resource are detailed in the respective resource sections below.

Special-status plants

A list of special-status plant species with the potential to occur in the Proposed Project Area was developed by querying the following resources:

- U.S. Fish and Wildlife Service (USFWS) list of federally listed and proposed endangered, threatened, and candidate species (USFWS 2012);
- California Native Plant Society’s (CNPS) online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2012); and
- California Department of Fish and Wildlife’s (CDFW) California Natural Diversity Database (<https://www.wildlife.ca.gov/Data/CNDDDB>) (CDFW 2011).

The USFWS, CNPS, and CNDDDB database queries for plant species were based on a search of the U.S. Geological Survey (USGS) 7.5’-quadrangle in which the site is located (Cordelia), and the surrounding eight quadrangles (Mount George, Fairfield North, Cuttings Wharf, Mare Island, Napa, Fairfield South, Benicia, and Vine Hill), covering an area extending five miles from the Proposed Project Area boundaries. A county-wide query was also conducted of the USFWS database. The list of all potentially occurring special-status plant species identified from the combined sources described above is provided in Attachment A, Table A-1. This list includes those species that have been documented to occur within these quadrangles, either historically or recently, and have the following status designations:

- State or federally threatened, endangered, candidate, proposed threatened, or proposed endangered; federal species of concern (former category 2 candidates);
- Species listed as rare by the state; and

- Plant species with a California Rare Plant Rank (CRPR) of 1A, 1B, 2, 3, and 4.

Of the 58 special-status plant species that have the potential to occur in the Proposed Project Area (Appendix A, Table A-1), 21 species possess known habitat associations (Table 6). Existing data for Lynch Canyon indicate that suitable habitat for special-status plants is dominated by non-native grasslands and ruderal herbaceous vegetation, with riparian trees and shrubs present in lowland, protected drainages. In addition, there are small patches of native grasses occurring on low and north facing slopes, small oak groves scattered throughout the Proposed Project Area, and pockets of freshwater emergent marsh along the periphery of the reservoir (RMI 1998, Stillwater Sciences 2008). Vernal pool and serpentine-soil habitats are not present in Lynch Canyon. The subset of special-status plant species with known habitat associations in the Proposed Project Area (Table 6) was used to inform the spring 2012 rare plant surveys within the Construction Footprint.

The rare plant surveys were consistent with generally accepted methods for conducting floristic surveys in California and followed the special-status plant species survey techniques used by federal and state agencies that manage public lands within the vicinity of the Proposed Project (USFWS 1996, CDFG 2009). Because no nonvascular plant species were identified within the species scoping process, a comprehensive nonvascular plant species survey was not conducted. Survey protocols followed the *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* (CDFG 2009) and *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 1996). Specifically, surveys were comprehensive for vascular plants such that “every plant taxon that occurs on site is identified to the taxonomic level necessary to determine rarity and listing status” (CDFG 2009). Botanists conducted floristic field surveys and identified vascular plants to species, subspecies, or variety, as necessary to verify the special-status taxon, using the Jepson Manual, second edition (Baldwin et al. 2012). If identification was not possible in the field, the plants were collected for identification in the laboratory (using the “1 in 20” rule, in accordance with Wagner 1991).

During the spring 2012 rare plant surveys, *Juglans hindsii* (northern California black walnut) was documented in the vicinity of the Construction Footprint. This species is considered a special-status plant within its native range; however, the Lynch Canyon Open Space is not within the native occurrence areas documented in CNDDDB (CNPS 2012). The observed species belong to the widely naturalized populations that occur throughout the San Francisco Bay Area and are offered no special protections. Furthermore, the *Juglans hindsii* individuals in the Construction Footprint are part of an historical orchard and are likely to be offspring of grafted specimens (California black walnut is typically grafted with English walnut for nut production). No other special-status plant species were documented during the 2012 rare plant surveys. A comprehensive list of all vascular plant species observed during the survey is provided in Appendix C of the *Lynch Canyon Reservoir Biological and Cultural Resource Evaluation* dated August 2012 that is on file with the Division of Water Rights and available to the public.

Table 6. Special-status plant species with known habitat associations in the Proposed Project Area.

Scientific name	Common name	Source	Status ¹ CRPR/ State/ Federal	Habitat associations	Elevation m (ft)
<i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch	CNPS, CNDDDB	1B.2/--/--	Playas, valley and foothill grassland on adobe clay, and alkaline vernal pools	1–60 m (3–197 ft)
<i>Atriplex joaquiniana</i>	San Joaquin spearscale	CNPS, CNDDDB	1B.2/--/--	Chenopod scrub, meadows and seeps, playas, and alkaline areas of valley and foothill grassland	1–835 m (3–2,739 ft)
<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	big-scale balsamroot	CNPS, CNDDDB	1B.2/--/--	Chaparral, cismontane woodland, and sometimes serpentinite areas of valley and foothill grassland	90–15,55 m (295–5,102 ft)
<i>Brodiaea californica</i> var. <i>leptandra</i>	narrow-anthered California brodiaea	CNPS, CNDDDB	1B.2/--/--	Broad leafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and volcanic areas of valley and foothill grassland	110–915 m (361–3,002 ft)
<i>Calandrinia breweri</i>	Brewer's calandrinia	CNPS	4.2/--/--	Sandy or loamy soils, disturbed sites and burns in chaparral and coastal scrub	10–1,220 m (33–4,003 ft)
<i>Calochortus pulchellus</i>	Mt. Diablo fairy-lantern	CNPS, CNDDDB	1B.2/--/--	Chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland	30–840 m (98–2,756 ft)
<i>Castilleja affinis</i> ssp. <i>neglecta</i>	Tiburon paintbrush	CNPS, CNDDDB, USFWS	1B.2/ Threatened/ Endangered	Serpentinite areas in valley and foothill grassland	60–400 m (197–1,312 ft)
<i>Centromadia parryi</i> ssp. <i>parryi</i>	pappose tarplant	CNPS, CNDDDB	1B.2/--/--	Chaparral, coastal prairie, meadows and seeps, coastal saline marshes and swamps, and vernal mesic often alkaline areas of valley and foothill grassland	2–420 m (7–1,378 ft)
<i>Dirca occidentalis</i>	western leatherwood	CNPS, CNDDDB	1B.2/--/--	Broad leafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, and mesic riparian woodland	25–395 m (82–1,296 ft)
<i>Downingia pusilla</i>	dwarf downingia	CNPS, CNDDDB	2.2/--/--	Mesic valley and foothill grassland and vernal pools	1–445 m (3–1,460 ft)

Scientific name	Common name	Source	Status ¹ CRPR/ State/ Federal	Habitat associations	Elevation m (ft)
<i>Eriogonum luteolum</i> var. <i>caninum</i>	Tiburon buckwheat	CNPS	1B.2/--/--	Sandy to gravelly areas of chaparral, cismontane woodland, coastal prairie, serpentinite valley and foothill grassland	0–700 m (0–2,297 ft)
<i>Eriogonum truncatum</i>	Mt. Diablo buckwheat	CNPS, CNDDDB	1B.1/--/--	Chaparral, coastal scrub, sandy areas of valley and foothill grassland	3–350 m (10–1,148 ft)
<i>Fritillaria liliacea</i>	fragrant fritillary	CNPS, CNDDDB	1B.2/--/--	Cismontane woodland, coastal prairie, coastal scrub, often serpentinite areas of valley and foothill grassland	3–410 m (10–1,345 ft)
<i>Helianthella castanea</i>	Diablo helianthella	CNPS, CNDDDB	1B.2/--/--	Broad leafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland	60–1,300 m (197–4,265 ft)
<i>Hesperolinon breweri</i>	Brewer's western flax	CNPS, CNDDDB	1B.2/--/--	Chaparral, cismontane woodland, and usually serpentinite areas of valley and foothill grassland	30–900 m (98–2,953 ft)
<i>Iris longipetala</i>	coast iris	CNPS	4.2/--/--	Mesic areas of coastal prairie, lower montane coniferous forest, and meadows and seeps	0–600 m (0–1,968 ft)
<i>Juglans hindsii</i>	Northern California black walnut	CNPS, CNDDDB	1B.1/--/--	Riparian forest and riparian woodland	0–440 m (0–1,444 ft)
<i>Lasthenia conjugens</i>	Contra Costa goldfields	CNPS, CNDDDB, USFWS	1B.1/--/ Endangered	Cismontane woodland, alkaline playas, valley and foothill grassland, and mesic vernal pools	0–470 m (0–1,542 ft)
<i>Micropus amphiboles</i>	Mt. Diablo cottonweed	CNPS	3.2/--/--	Broad leafed upland forest, chaparral, cismontane woodland, and rocky areas of valley and foothill grassland	45–825 m (148–2,707 ft)
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	CNDDDB	1B.1/--/--	Mesic areas of cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and vernal pools	5–1,740 m (16–5,709 ft)
<i>Rhynchospora californica</i>	California beaked-rush	CNPS, CNDDDB	1B.1/--/--	Bogs and fens, lower montane coniferous forest, meadows and seeps, and freshwater marshes and swamps	45–1,010 m (148–3,314 ft)

Scientific name	Common name	Source	Status ¹ CRPR/ State/ Federal	Habitat associations	Elevation m (ft)
<i>Stuckenia filiformis</i>	slender-leaved pondweed	CNPS, CNDDDB	2.2/--/--	Assorted shallow freshwater marshes and swamps	300–2,150 m (984–7,054 ft)
<i>Trichostema ruygtii</i>	Napa bluecurls	CNPS, CNDDDB	1B.2/--/--	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, and vernal pools	30–680 m (98–2,231 ft)
<i>Trifolium amoenum</i>	two-fork clover	CNPS, CNDDDB	1B.1/--/ Endangered	Coastal bluff scrub and sometimes serpentinite areas of valley and foothill grassland	5–415 m (16–1,362 ft)

¹ Status:

- No federal status
- No state status

CRPR List 1B Plants rare, threatened, or endangered in California and elsewhere
 List 2 Plants rare, threatened, or endangered in California, but more common elsewhere
 List 3 More information needed about this plant, a review list
 List 4 Plants of limited distribution, a watch list

CRPR Threat Ranks:

- 0.1 - Seriously threatened in California (high degree/immediacy of threat)
- 0.2 - Fairly threatened in California (moderate degree/immediacy of threat)

Special-status wildlife

A list of special-status wildlife species with the potential to occur in the Proposed Project Area was created using results of the special-status species analysis conducted for the Lynch Canyon Resources Management Plan (RMI 1998) and an updated query of the CNDDDB for additional special-status species that have been documented since 1998. The updated query covers an area extending five miles from the Proposed Project Area boundaries, which includes primarily the Cordelia, California USGS 7.5-minute topographic quadrangle, and but also portions of the Mt. George, Napa, Fairfield South, Cuttings Wharf, and Benicia quadrangles (CDFW 2011). The special-status wildlife species evaluated for the analysis includes those species identified from the two sources above, with the following status designations:

- state or federally threatened, endangered, candidate, protected, proposed threatened, proposed endangered, or protected under the Bald and Golden Eagle Protection Act; and
- state species of special concern.

The list of special-status wildlife with the potential to occur was compared with known habitat associations in the Proposed Project Area (Table 78). Assumptions regarding habitat associations were based on the Lynch Canyon Resource Management Plan (RMI 1998), the Environmental Setting and Baseline Description Report (Stillwater

Sciences 2009), recent aerial photography, and on-site photographs; no new field surveys were conducted for wildlife. If habitat for a species is known to be lacking, or if the Proposed Project Area occurs outside the species' known range, the species was considered unlikely to occur and potential impacts to that species as a result of the Proposed Project were not assessed.

Four special-status wildlife species previously recorded in the Cordelia USGS quadrangle are associated with tidal/ brackish water marshes, saline emergent wetlands, or vernal pools. These include Suisun song sparrow (*Melospiza melodia maxillaris*), salt-marsh harvest mouse (*Reithrodontomys raviventris*), Suisun shrew (*Sorex ornatus sinuosus*), and fairy shrimp (*Branchinecta lynchi*). Suitable habitat for these species does not occur in the Proposed Project Area and thus these species are not likely to occur.

Habitat associations for 21 special-status wildlife species were identified in the Proposed Project Area. Table 78 summarizes these species, provides details regarding their habitat associations, life histories, and addresses the suitability of habitats in and surrounding the Proposed Project Area.

Table 7. Special-status wildlife species with known habitat associations in the Proposed Project Area.

Common name ^a (Scientific name)	Status ^b Federal/State	Habitat association and life history timing	Suitability of habitat in the Proposed Project Area
Invertebrates			
callippe silverspot butterfly (<i>Speyeria callippe callippe</i>)	FE/–	Grassland. <i>Viola pedunculata</i> (Johnny jump up or California golden violet) is obligate larval host plant.	Stands of native grasses occurring in the Proposed Project Area provide potential habitat for <i>Viola pedunculata</i> (larval host plant); however, a prior USFWS survey conducted in April 2009 did not find the host plant and suggested that while there could be some isolated, small stands in Lynch Canyon, they are not likely to support a population of callippe silverspot (S. Wickham, pers. comm., 2011). Host plant was observed on nearby Lynch Canyon Open Space properties approximately 3.2 km (2 mi) from the Proposed Project (SLT and PG&E 2007). However, during spring 2012 plant surveys within the Construction Footprint, the host plant was not documented; therefore, the presence eggs and larvae within the Construction Footprint are unlikely.
Amphibians and Reptiles			
California red-legged frog (<i>Rana draytonii</i>)	FT/SSC; Designated critical habitat	Wetlands, wet meadows, ponds, lakes, and pools in low-gradient, slow moving stream reaches with permanent sources of deep water and often with riparian vegetation (0–1,524 m [0–5,000 ft]). May retreat in rodent burrows or moist cracks during dry periods. Breeding typically occurs from November through March, egg hatching between December through April, and tadpoles generally metamorphose in four to seven months thereafter (California Herps. 2013).	Species observed in Lynch Canyon approximately 0.4 km (0.25 mi) the Proposed Project Area (S. Wickham, pers. comm., 2011) and closest documented CNDDDB occurrence is approximately 1.6 km (1.0 mi) from the Lynch Canyon Reservoir (CDFW 2012a). Potential breeding habitat in the reservoir; suitable non-breeding habitat in shallower marshlands, assuming they are generally less than 1-ft deep.

Common name ^a (<i>Scientific name</i>)	Status ^b Federal/State	Habitat association and life history timing	Suitability of habitat in the Proposed Project Area
foothill yellow-legged frog (<i>Rana boylei</i>)	-/CT, SSC	Partially-shaded, shallow, perennial streams, and riffles with rocky cobble- or boulder-sized substrate. The breeding season for foothill yellow-legged frogs is April–October, with oviposition typically beginning in spring (around April–May, depending on locale) (Kupferberg 1996), eggs generally hatching within 5–37 days (Zweifel 1955, Ashton et al. 1998), and tadpoles generally metamorphosing within 3–4 months after hatching (Lannoo 2005).	The Lynch Canyon Resource Management Plan (RMI 1998) identified the species has the potential to occur; however, no CNDDB occurrences have been documented within 8 km (5 mi) of the Proposed Project (CDFG 2011). While the North Fork of Lynch Canyon Creek has the potential to provide breeding habitat, it is unlikely the species are present assuming substrate is primarily silt and not cobble or boulder.
Western pond turtle (<i>Emys marmorata</i>)	-/SSC	Ponds, marshes, rivers, streams, and/or irrigation ditches below 1,830 m (6,000 ft) elevation. Egg-laying sites are located on suitable upland habitats (sandy banks or grassy open fields) up to 500 m (1,640 ft) from water. Eggs are typically laid in June and July, but can be laid as early as late April and as late as August (Holland 1994). In California, incubation may range from approximately 80 to 100 or more days. In central California, hatchlings that don't overwinter and emerge the following spring will emerge from the nest in early fall (Holland 1994).	The Lynch Canyon Resource Management Plan (RMI 1998) identified the species has the potential to occur; the closest documented CNDDB occurrence is approximately 3.2 km (2 mi) from the Lynch Canyon Reservoir (CDFG 2011). Potential habitat in the reservoir, and nesting habitat in nearby grassy uplands; species observed on nearby Lynch Canyon Open Space properties (Stillwater Sciences 2008).

Common name ^a (Scientific name)	Status ^b Federal/State	Habitat association and life history timing	Suitability of habitat in the Proposed Project Area
Birds			
least bittern (<i>Ixobrychus exilis</i>)	-/SSC	Marshlands with dense emergent vegetation. Nests on ground nest within tall dense stands of vegetation. Peak breeding season is mid-May through July; comprehensive breeding season is May through August (Poole et al. 2009).	The Lynch Canyon Resource Management (RMI 1998) identified the species has the potential to occur as suitable nesting habitat may be present; however, no CNDDDB occurrences have been documented within 8 km (5 mi) of the Proposed Project (CDFG 2011). While there is some emergent vegetation around the reservoir, likelihood for nesting in the Proposed Project Area is low due to the relatively small area of tall, dense emergent vegetation; Proposed Project Area is outside of the typical range for the species.
northern harrier (<i>Circus cyaneus</i>)	-/SSC	Grassland, meadows, wetlands, pastures, prairies, croplands, and riparian woodlands. Nest on ground in thick marsh or shrub cover. Breeding season is February 1 through August 31 (LSA Associates 2009); however, the timing between courtship and when young fledge generally occurs between mid-March and mid-July (RMI1998).	Nesting pairs have been detected on King/Swett Ranch, approximately 3.2 km (2 mi) from the Proposed Project and the northern harrier has been observed foraging on Lynch Canyon Open Space property (SLT and PG&E 2007). Suitable nesting habitat is present in marshlands and grasslands, with shrubs, within the vicinity of the Proposed Project Area.
white-tailed kite (<i>Elanus leucurus</i>)	-/FP	Open woodlands, grasslands, cultivated fields, meadows, or marshes for foraging. Isolated, dense-topped trees (>3 m [10 ft] tall) for nesting and perching. The timing between courtship and when young fledge generally occurs between mid-March and mid-July (RMI 1998); comprehensive breeding season is early February through early-August (Dunk 1995).	Observed on King/Swett Ranch, approximately 3.2 km (2 mi) from the Proposed Project (Henke 2006, as cited in SLT & PG&E 2007); the closest CNDDDB occurrence is approximately 4.8 km (3 mi) from the Proposed Project (CDFG 2011). Documented flying over the reservoir during an April 2013 site visit and three mating pairs near project (S. Wickham, pers. comm., 2013). Suitable foraging habitat in grasslands; potential to nest in trees within the vicinity of the Proposed Project Area.

Common name ^a (<i>Scientific name</i>)	Status ^b Federal/State	Habitat association and life history timing	Suitability of habitat in the Proposed Project Area
Swainson's hawk (<i>Buteo swainsoni</i>)	-/ST	Open habitats such as shrubland, grassland, and agricultural areas. Nests in a wide variety of tree species including riparian forest, remnant riparian trees, and upland oaks. Breeding season is March 15 through August 31 (LSA Associates 2009) however, the timing between courtship and when young fledge generally occurs between mid-March and mid-July (RMI 1998); comprehensive breeding season is March 16 through August (LSA Associates 2009).	Has been observed foraging on Lynch Canyon Open Space property at King/Swett Ranch, approximately 3.2 km (2 mi) from the Proposed Project (Henke 2006, as cited in SLT and PG&E 2007). The closest CNDDDB occurrence is approximately 5.6 km (3.5 mi) from the Proposed Project (CDFG 2011). Suitable foraging habitat in grasslands; potential to nest in trees within the vicinity of the Proposed Project Area.
ferruginous hawk (<i>Buteo regalis</i>)	-/SSC	Associated with valley foothill grasslands and open, level, or rolling prairies; typically migrates north (Oregon and Washington) to breed and nest and is present in California during fall and winter. The timing between courtship and when young fledge generally occurs between mid-March and mid-July (RMI 1998); comprehensive breeding season is mid-March through mid-August (Bechard and Schmutz 1995).	Has been observed as migrant on Lynch Canyon Open Space property and nearby King/Swett Ranch located approximately 3.2 km (2 mi) from the Proposed Project (SLT and PG&E 2007). The closest CNDDDB occurrence is approximately 5.6 km (3.5 mi) from the Proposed Project (CDFG 2011). Suitable foraging habitat in grasslands; Proposed Project Area outside of breeding range.
bald eagle (<i>Haliaeetus leucocephalus</i>)	BGEPA/SE, FP	Nests and roosts in coniferous forests within 1.6 km (1 mi) of a lake, reservoir, stream, or the ocean. Associated with large, old-growth or dominant live trees (e.g., ponderosa pine) with open branches. The timing between courtship and when young fledge generally occurs between mid-March and mid-July (RMI 1998); comprehensive breeding season is late March through mid-September (Buehler 2000).	The Lynch Canyon Resource Management Plan (RMI 1998) identified the species has the potential to occur; however, no CNDDDB occurrences have been documented within 8 km (5 mi) of the Proposed Project (CDFG 2011). No suitable nesting habitat, low potential for foraging in reservoir.

Common name ^a (<i>Scientific name</i>)	Status ^b Federal/State	Habitat association and life history timing	Suitability of habitat in the Proposed Project Area
golden eagle (<i>Aquila chrysaetos</i>)	BGEPA/FP	Associated with open woodlands and oak savannahs, grasslands, chaparral, sagebrush flats; nests on steep cliffs or medium to tall trees. The timing between courtship and when young fledge generally occurs between mid-March and mid-July (RMI 1998); comprehensive breeding season is late March through late August (Kochert et al. 2002).	Has been observed foraging at King/Swett Ranch on Lynch Canyon Open Space property, located approximately 3.2 km (2 mi) from the Proposed Project (Henke 2006, as cited in SLT and PG&E 2007). Nesting pairs have been recorded near Lynch Canyon (Poerner 2005, as cited in SLT and PG&E 2007); although breeding activity has not been documented on the SLT properties (SLT and PG&E 2007). The closest CNDDDB occurrence is approximately 4.8 km (3 mi) from the Proposed Project (CDFG 2011). Suitable foraging habitat in grasslands; potential to nest in trees within the vicinity of the Proposed Project Area.
American peregrine falcon (<i>Falco peregrinus</i>)	-/FP	Woodlands, wetlands, riparian areas, agricultural lands, coastal areas, and cities. Nests are usually located near water, and are typically constructed on ledges of large cliff faces. The timing between courtship and when young fledge generally occurs between mid-March and mid-July (RMI 1998).	American peregrine falcon observed on SLT properties (Epstein 2006, as cited in SLT & PG&E 2007). No suitable cliff for nesting in Proposed Project vicinity; potential for foraging in grassland habitats.
short-eared owl (<i>Asio flammeus</i>)	-/SSC	Grassland, marshland, and open woodland. Ground nesting. The timing between courtship and when young fledge generally occurs between mid-March and mid-July (RMI 1998); comprehensive breeding season is mid-March through late-June (Wiggins et al. 2006).	Historically observed on the King/Swett ranches located approximately 3.2 km (2 mi) from the Proposed Project Area (Meisler 2002, as cited in SLT & PG&E 2007). Potential for nesting and/or foraging in the Proposed Project Area.
burrowing owl (<i>Athene cunicularia</i>)	-/SSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel. Breeding season is February 1 through August 31 (CDFG 2012); however, the	Potential for nesting in grassland habitats, depending on availability of burrows; since 2008, species has been observed in upland burrows on the southwest side of the Lynch Canyon Reservoir from October through March (S. Wickham, pers. comm., 2011).

Common name ^a (<i>Scientific name</i>)	Status ^b Federal/State	Habitat association and life history timing	Suitability of habitat in the Proposed Project Area
		timing between courtship and when young fledge generally occurs between mid-March and mid-July (RMI 1998).	
purple martin (<i>Progne subis</i>)	-/SSC	Riparian habitats, conifers, hardwoods. Nests in cavities of trees, cliffs, and buildings. Comprehensive breeding season is April through mid-August (Tarof and Brown 1997).	Likelihood for nesting in the Proposed Project Area is low due to the relatively small area of suitable nesting trees; Proposed Project Area is outside of the typical range for the species.
yellow warbler (<i>Dendroica petechia brewsteri</i>)	-/SSC	Deciduous riparian habitats, scrublands, open fields. Nests in trees. Breeding season is late-March through early August (Lowther et al. 1999).	The Lynch Canyon Resource Management Plan (RMI 1998) identified the species has the potential to occur as suitable habitat may be present; however, no CNDDDB occurrences have been documented within 8 km (5 mi) of the Proposed Project (CDFG 2011). While the riparian habitats along the North Fork of Lynch Canyon Creek provide potential nesting habitat, the likelihood for nesting in the Proposed Project Area is low because the Proposed Project Area is outside of the typical range for the species.
tricolored blackbird (<i>Agelaius tricolor</i>)	-/CE, SSC	Highly colonial species, most numerous in Central Valley and vicinity. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony. Breeding season is February 1 through August 31 (LSA Associates 2009)	The Lynch Canyon Resource Management Plan (RMI 1998) identified the species has the potential to occur as suitable habitat may be present; however, no CNDDDB occurrences have been documented within 8 km (5 mi) of the Proposed Project (CDFG 2011). Potential for nesting in the emergent vegetation of the marshlands; however, total area of emergent marshlands may not be sufficient to support a nesting colony.

Common name ^a (Scientific name)	Status ^b Federal/State	Habitat association and life history timing	Suitability of habitat in the Proposed Project Area
Mammals			
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	-/SSC	Cavity roosting, most likely in tunnels, caves, mines, but also rock shelters, preferentially close to water. The maternity season is typically early May through late August.	The Lynch Canyon Resource Management Plan (RMI 1998) identified the species has the potential to occur as suitable habitat may be present; however, no CNDDB occurrences have been documented within 8 km (5 mi) of the Proposed Project (CDFG 2011). Unlikely to roost in Proposed Project Area due to apparent lack of tunnels, caves, and mines. Rip-rap present does not appear to provide interstitial spaces that are large enough for colonial roosting and to fly in and out. May visit from afar in the evening to forage over marshlands and reservoir.
pallid bat (<i>Antrozous pallidus</i>)	-/SSC	Day roosts include caves, secluded spots under concrete bridges, cracks in rocks, hollow trees, inside old buildings, hollow walls, and under roofs. The maternity season is typically early May through late August.	The Lynch Canyon Resource Management (RMI 1998) identified the species has the potential to occur as suitable habitat may be present; however, no CNDDB occurrences have been documented within 8 km (5 mi) of the Proposed Project (CDFG 2011). Potential to crawl in and roost solitarily or cluster in small cracks throughout the rip-rap; however, during a recent site visit in April 2013, CDFW determined that the rip-rap does not likely support the species (C. Gray pers. comm. as cited in Stillwater Sciences 2013). Proposed Project Area lacks hollow trees and buildings to support roosting habitat. May forage over upland terrestrial habitat in the evening.

Common name ^a (<i>Scientific name</i>)	Status ^b Federal/State	Habitat association and life history timing	Suitability of habitat in the Proposed Project Area
Western mastiff bat (<i>Eumops perotis californicus</i>)	-/SSC	Crevice roosting. Found in rock features, often steep slopes or rock out-crops associated with river drainages. Under slabs of exfoliating granite. Basaltic columns. The maternity season is typically early May through late August.	The Lynch Canyon Resource Management (RMI 1998) identified the species has the potential to occur as suitable habitat may be present; however, no CNDDDB occurrences have been documented within 8 km (5 mi) of the Proposed Project (CDFG 2011). Unlikely to roost in Project Area due to apparent lack of rocky outcrops associated with a free drop space below a potential roost; may visit from afar in the evening to forage over marshlands and reservoir.
American badger (<i>Taxidea taxus</i>)	-/SSC	Associated with grassland, drier open shrub, forest, and herbaceous habitat with friable soils on uncultivated ground. Litters are born between March and April and cubs are weaned by June.	The Lynch Canyon Resource Management (RMI 1998) identified the species has the potential to occur as suitable habitat may be present; however, no CNDDDB occurrences have been documented within 8 km (5 mi) of the Proposed Project (CDFG 2011). Potential to occur in grassland habitats, depending on availability of burrows.

^a Special-status wildlife species identified in the Lynch Canyon Resources Management Plan (RMI 1998) and a CNDDDB query (CDFG 2011) covering an area extending five miles from the Proposed Project Area boundaries.

^b Status:

- Federal** FE Federally listed as endangered
- FT Federally listed as threatened
- BGEPA Protected under the Bald and Golden Eagle Protection Act
- No federal status
- State** SE State-listed as endangered
- ST State-listed as threatened
- SSC Considered a species of special concern by CDFW
- CT Candidate listing as threatened by CDFW
- CE Candidate listing as endangered by CDFW
- FP Considered fully protected by CDFW
- No state status

Fisheries assessment

No special-status fish species have the potential to occur in the Lynch Canyon Open Space based on the special-status species analysis conducted for the Lynch Canyon Resources Management Plan (RMI 1998) and the CNDDDB query results for special-status species documented within five miles of the Proposed Project Area boundaries (CDFW 2011). However, five special-status fish species were identified in the USFWS query for federal endangered and threatened species and designated critical habitat in the Cordelia quadrangle (Table 89). These include Central Valley steelhead, Central Valley spring-run Chinook salmon, winter-run Chinook salmon, and Delta smelt. These species travel through Suisun Bay as part of normal migratory routes, and can sometimes be present in backwater sloughs in Suisun Marsh, particularly during high water periods. Fall-run Chinook salmon can also be present in backwater areas of the marsh. However, no suitable habitat for these species exists upstream of Suisun Marsh, including in the Unnamed Stream (locally referred to as Red Top Creek or American Canyon Creek) and Lynch Canyon Creek (G. Stern, NMFS, Pers. comm., June 6, 2013). Therefore, these species are not considered further in this analysis.

A fisheries assessment was conducted to identify historical or contemporary evidence that supports a determination of the upper limit of steelhead (*Oncorhynchus mykiss*) anadromy on Lynch Canyon Creek and the stream classification for Lynch Canyon Creek.

A literature review and communication with the following fisheries experts and agency staff was undertaken from April 12–28, 2011:

- CDFW staff, Yountville Office, California
- Gary Stern, National Marine Fisheries Service, San Francisco Bay Region Supervisor, Santa Rosa, California
- Dan Logan, National Marine Fisheries Service, Protected Resources Division, Arcata, California
- Robert Leidy, U.S. Environmental Protection Agency, San Francisco, California (re: historical distribution of *O. mykiss* in northern California and the Bay Area)
- Steve Foreman, LSA Associates, who prepared the Salmonid Habitat Assessment Solano Habitat Conservation Plan (LSA Associates 2008)

Table 8. List of all potentially occurring special-status fish species in the Proposed Project Area.

Common name (<i>Scientific name</i>)	Status ^a Federal/State	Distribution in California and Habitat Association	Suitability of habitat in the Proposed Project Area
Delta smelt (<i>Hypomesus transpacificus</i>)	FT/SE	Found only in the Sacramento-San Joaquin Estuary, including the lower reaches of Sacramento and Napa rivers; the Delta including Suisun Bay, Goodyear, Suisun, Cutoff, First Mallard, and Montezuma sloughs. Estuarine or brackish waters up to 18 parts per thousand (ppt); spawn in shallow brackish water upstream of the mixing zone (zone of saltwater-freshwater interface) where salinity is around 2 ppt.	No suitable habitat is present as the south and north forks of Lynch Canyon Creek are not tidally influenced. The closest potential habitat is Cordelia Slough, located approximately 6 km (4 mi) from the Proposed Project Area.
Steelhead (<i>Oncorhynchus mykiss</i>) Central Valley steelhead Designated critical habitat for Central California coast steelhead	FT/--	Central Valley steelhead distribution include rivers and creeks in the Central Valley (e.g., Sacramento, San Joaquin, Stanislaus counties) and Central California coast steelhead include rivers and creeks within counties generally surrounding San Francisco Bay. Rivers and streams with cold water, clean gravel of appropriate size for spawning, and suitable rearing habitat; typically rear in freshwater for one or more years before migrating to the ocean. Winter steelhead adult migration occurs from June to March (Hallock et al. 1961, Bailey 1954, as cited in McEwan and Jackson 1996), spawning from January to March (Mills and Fisher 1994), adults (kelts) return to the sea from April to June (Mills and Fisher 1994), incubation from December to April (Reynolds et al. 1993), rearing from January to December, and outmigration from April to June (Reynolds et al. 1993).	The Proposed Project Area excludes the Central Valley steelhead, but includes the Evolutionary Significant Unit (ESU) for Central California coast steelhead (NMFS n.d.). Critical habitat for the Central California coastal steelhead is not present in the Proposed Project Area; the closest designated critical habitat is at a distance of approximately 6 km (4 mi) from the Proposed Project along Suscol Creek, a tributary to the Napa River (www.calfish.org). Shallow waters may support habitat for rearing 0+ or 1+ rearing juvenile steelhead. Although there is no evidence of presence, the upper limit of anadromy has been identified at POI #4, just downstream of the confluence of the south and north forks of Lynch Canyon Creek.

Common name (<i>Scientific name</i>)	Status ^a Federal/State	Distribution in California and Habitat Association	Suitability of habitat in the Proposed Project Area
Central Valley spring-run Chinook salmon (<i>Oncorhynchus tshawytscha</i>)	FT/ST	Sacramento River and its tributaries (Deer, Mill, Antelope, Battle, Beegum, Butte, and Big Chico creeks and the Feather and Yuba rivers). Low- to mid-elevation rivers and streams with cold water, clean gravel of appropriate size for spawning and adequate rearing habitat; typically rear in freshwater for one or more years before migrating to the ocean.	No suitable habitat is present. Lynch Canyon Creek is not large enough nor have adequate summer flows, which are typically derived from snow melt to support spawning or rearing habitat. Lynch Canyon Creek is a perennial stream which is fed by groundwater during the summer and fall and no deep pools are present. Rearing habitat may be present in Cordelia Slough, located approximately 6 km (4 mi) from the Proposed Project Area.
Winter-run Chinook salmon (<i>Oncorhynchus tshawytscha</i>)	FE/SE	Sacramento River and its tributaries; Sacramento-San Joaquin Delta; San Francisco, San Pablo and Suisun bays. Mainstem river reaches with cool water and available spawning gravel; rear five to ten months in the river and estuary; migrate to the ocean to feed and grow until sexually mature.	No suitable habitat is present and outside of known distribution. Lynch Canyon Creek is not large enough nor have adequate cold summer flows to support spawning or summer rearing habitat. Lynch Canyon Creek is a perennial stream which is fed by groundwater during the summer and fall and no deep pools are present. Rearing habitat may be present in Cordelia Slough, located approximately 6 km (4 mi) from the Proposed Project Area.

^a Status:

- Federal** FE Federally listed as endangered
- FT Federally listed as threatened
- State** SE State-listed as endangered
- ST State-listed as threatened
- No state status

The following literature was reviewed—no information was found to document salmonid use of Lynch Canyon Creek. A small run of *Oncorhynchus mykiss* is currently present in Unnamed Creek (sometimes called Red Top Creek or American Canyon Creek) (Gary Stern and Dan Logan, National Marine Fisheries Service, 2011, pers. comm.; Leidy et al. 2005; Stillwater Sciences 2003).

- Asbury, D. 2005. Historical status of *Oncorhynchus mykiss* in streams of Solano County, California. Map. Prepared by Center for Ecosystem Management and Restoration, Oakland, California.
- CDFG (California Department of Fish and Game). 2011. California Natural Diversity Database (CNDDDB), Rarefind version 3.1.1. Natural Heritage Division, California Department of Fish and Game, Sacramento, California. <http://www.dfg.ca.gov/whdab/html/cnddb.html>.
- Leidy, R. A., G. Becker, and B. N. Harvey. 2005. Historical distribution and current status of steelhead/rainbow trout (*Oncorhynchus mykiss*) in streams of the San Francisco estuary, California. Center for Ecosystem Management and Restoration, Oakland, California.
- LSA Associates, Inc. 2008. Salmonid habitat assessment: Solano habitat conservation plan. Prepared by LSA Associates, Inc., Point Richmond, California for Solano County Water Agency, Vacaville, California.
- Moyle, P. B. 2002. Inland fishes of California. Revised edition. University of California Press, Berkeley.
- Pipal, K. A. 2005. Summary of monitoring activities for ESA-listed salmonids in California's Central Valley. NOAA-TM-NMFS-SWFSC-373. Prepared by National Marine Fisheries Service, Southwest Fisheries Science Center, Santa Cruz, California.
- Stern, G., J. Nielsen, G. Becker, J. Smith, B. Cox, P. Alexander, D. McEwan, M. Croom, K. Kull, and S. Akin. n.d. Salmon and steelhead in your creek: restoration and management of anadromous fish in Bay Area watersheds. Presentation summaries.
- Stillwater Sciences. 2003. Fish survey report for an unnamed tributary to Cordelia Slough. Document No. CTSW-RT-03-087.51.27. Prepared by Stillwater Sciences, Davis, California for California Department of Transportation, District 4, Oakland, California.
- Yoshiyama, R. M., E. R. Gerstung, F. W. Fisher, and P. B. Moyle. 2001. Historical and present distribution of Chinook salmon in the Central Valley drainage of California. Pages 71–176 in R. L. Brown, editor. Contributions to the biology of Central Valley salmonids. Fish Bulletin 179: Volume 1. California Department of Fish and Game, Sacramento.

North Fork of Lynch Canyon Creek is a shallow stream with a narrow riparian corridor that supports aquatic plants and hydric soils; Figure 12 illustrates current habitat conditions on Lynch Canyon Creek. Based on the habitat characteristics (i.e., habitat is present for aquatic non-fish vertebrates and aquatic benthic macroinvertebrates), North Fork of Lynch Canyon Creek appears to be a Class II stream. Fish are not currently present in Lynch Canyon Creek and no historical surveys were found that would support the presence of anadromous fish in the creek. However, historical data indicating an absence of anadromous fish in Lynch Canyon Creek was not found and stream gradient in lower Lynch Canyon Creek is not sufficient (i.e., greater than approximately 8%) to have clearly prevented the migration of historical populations into the creek (the presence of a contemporary culvert at the I-80 crossing is not considered to be a natural migration barrier). At a site visit conducted on April 15, 2008, staff from Division of Water Rights and CDFW indicated that Lynch Canyon Creek (downstream of the north and south forks) may provide spawning and rearing habitat for steelhead downstream of the reservoir, which may make it a Class I stream. Therefore, as recommended by CDFW (Corinne Gray, pers. comm., 2011), the upper limit of anadromy (LOA) for the Lynch Canyon Creek watershed is determined to be at Water Availability Analysis POI #4, just downstream of the confluence of the south and north forks of Lynch Canyon Creek (Figure 8). POIs were determined in the development of the Water Availability Analysis, as mentioned in the Hydrology and Water Quality section, in consultation with CDFW via a memorandum from Charles Armor, CDFW Regional Manager of the Bay Delta Region, on September 4, 2008. POI #1 is located immediately downstream of the Point of Diversion on the North Fork of Lynch Canyon Creek. POI #2 is at the confluence of Lynch Canyon Creek with the unnamed tributary to Cordelia Slough. POI #3 is on Cordelia Slough just upstream of the crossing under Highway 680 and upstream of the confluence with Suisun Slough.

In addition, the area upstream of the current Lynch Dam was not historically a source of large woody debris and gravel to the downstream watershed, nor would it be under existing conditions should the dam be removed (Figure 13).



Figure 12. Representative habitat conditions on Lynch Canyon Creek May 5, 2011.



Figure 13. Watershed upstream of Lynch Reservoir.

2.6.4 Regulatory setting

This section provides an overview of the laws and regulations that influence the management of biological resources in the Proposed Project Area. Although many of these regulations will not apply to the Proposed Project because the resources in question are avoided, they are discussed here to provide context in determining which biological resources are considered *sensitive* for the purposes of this report and to discuss potential project-related effects.

Federal regulations

Endangered Species Act (ESA)

USFWS and the NMFS have jurisdiction over species listed as federally threatened or endangered under Section 9 of the Endangered Species Act (ESA). NMFS is responsible for protection of ESA-listed anadromous fish and marine species, and USFWS is responsible for other listed species. ESA protects listed species from harm, or take, which is broadly defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” For any project involving a federal agency in which a listed species could be affected, the federal

agency must consult with USFWS in accordance with Section 7 of ESA. USFWS issues a biological opinion and, if the project does not jeopardize the continued existence of the listed species, issues an incidental take permit. When no federal nexus is present, proponents of a project affecting a listed species must consult with USFWS and apply for an incidental take permit under Section 10 of ESA. Section 10 requires an Applicant to submit a habitat conservation plan that specifies project impacts and mitigation measures. Consultation with USFWS will be required if the Proposed Project will affect federally listed species or their habitat.

Section 404 of the Clean Water Act

See Section 2.5.2 *Regulatory Setting* of this Initial Study.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the former Soviet Union and authorizes the USFWS to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs. The MBTA prohibits intentional destruction for the sole purpose of removing or destroying occupied nests. Most bird species and their occupied nests that occur in the Proposed Project Area would be protected under the MBTA (Table 7).

State of California regulations

California Environmental Quality Act

The purpose of California Environmental Quality Act (CEQA) is to disclose significant environmental effects through the preparation of an Initial Study, Negative Declaration, or Environmental Impact Report; disclose the agency decision making process to the public; allow for public participation through the environmental review process; improve interagency coordination; and prevent or minimize damage to the environment by identifying mitigation measures and monitoring. A project is considered to result in a significant environmental effect (in the context of biological resources) if it substantially affects a rare or endangered species or the habitat of that species; substantially interferes with the movement of resident or migratory fish or wildlife; or substantially diminishes habitat for fish, wildlife, or plants. The State CEQA Guidelines define rare, threatened, or endangered species as those listed under ESA and California Endangered Species Act (CESA), as well as any other species that meets the criteria of the resource agencies or local agencies—for example, the CDFW-designated species of special concern and plant species assigned a Rare Plant Rank by CDFW. The State CEQA Guidelines specify that the lead agency preparing a CEQA compliance document must consult with and receive written findings from USFWS and CDFW concerning

project impacts on species that are listed as endangered or threatened. The effects of the project on these species and habitats will be important in determining whether the project is considered to cause significant environmental impacts under CEQA.

California Endangered Species Act

California implemented the California Endangered Species Act (CESA), which prohibits the take of endangered and threatened species. Under CESA, take is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include harm or harassment. Habitat destruction is not included in the state's definition of take. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and promote conservation of these species. CDFW administers the act and authorizes take through Section 2081 agreements (except for species designated as fully protected). Regarding rare plant species, CESA defers to the California Native Plant Protection Act (CNPPA) which prohibits importing rare and endangered plants into California, taking rare and endangered plants, and selling rare and endangered plants. State-listed plants are protected mainly in cases where state agencies are involved in projects under CEQA. In these cases, plants listed as rare under the CNPPA are not protected under CESA but can be protected under CEQA.

California Native Plant Protection Act

The CNPPA prohibits importation of rare and endangered plants into California, take of rare and endangered plants, and sale of rare and endangered plants. The CESA defers to the CNPPA, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the CNPPA are not protected under CESA but rather under CEQA.

California Fish and Game code

Sections 3503 and 3503.5

Section 3503 of the California Fish and Game Code prohibits the killing of birds and/or the destruction of occupied bird nests. Section 3503.5 prohibits the killing of raptor species and/or the destruction of occupied raptor nests. Consultation with CDFW will be required if nesting birds would be affected by project-related activities.

Section 3511 (fully protected birds)

The California Fish and Game Code provides protection for fully protected species. Section 3511 lists fully protected birds and prohibits take of these species. The California Fish and Game Code defines take as "hunt, pursue, catch, capture, or kill, or

attempt to hunt, pursue, catch, capture, or kill.” All take of fully protected species is prohibited, except for take related to scientific research.

Section 3513

Section 3513 of the California Fish and Game Code prohibits the take or possession of any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the USFWS under provisions of the MBTA.

Section 4700 (fully protected mammals)

Section 4700 of the code lists fully protected mammals and prohibits take of these species. All take of fully protected species is prohibited, except for take related to scientific research.

Section 1602—Lake and Streambed Alteration Agreements

See Section 2.5.2 Regulatory Setting of this Initial Study.

Porter-Cologne Water Quality Control Act

See Section 2.5.2 Regulatory Setting of this Initial Study.

Regional policies and plans (Solano County General Plan, Solano County Multispecies Habitat Conservation Plan, and Lynch Canyon Resource Management Plan)

Policies identified in the Solano County General Plan include the management of habitat found in natural areas to ensure ecological health and ability to sustain diverse flora and fauna and conservation and protection efforts to be focused in high-priority habitat areas. The Solano County General Plan indicates that the Proposed Project is located within the Jameson Canyon – Lower Napa River core recovery area for the California red-legged frog (USFWS 2002) (Figure 14). Core areas are locations where recovery actions are focused and have been chosen to support viable populations or to increase dispersal opportunities by increasing habitat connectivity. Designated critical habitat for the California red-legged frog (USFWS 2010) is also located at the Proposed Project (Figure 15). The Applicants are currently receiving technical assistance from USFWS, which is the precursor to formal consultation and development of a Biological Assessment related to potential impacts on designed critical habitat and to the California red-legged frog.

In addition, the Solano County Multispecies Habitat Conservation Plan (LSA Associates 2009) and the Lynch Canyon Resource Management Plan (RMI 1998) identifies protective measures for California red-legged frog and western pond turtle. These measures include (1) avoiding and minimizing, to the maximum extent practicable, fill of aquatic habitat and associated upland habitat; (2) surveyor approval from the Solano County Water Authority; (3) employee awareness training; (4) construction monitoring; (5) clean work environment; (6) implement best management plans to control erosion; if pumping will be used to temporarily de-water the site, intakes shall be screened with wire mesh no larger than 5 mm (0.04 in); (7) prior to dewatering, biologist shall relocate native fish and invertebrates; (8) permanently remove from the project site any exotic wildlife (e.g., bull frogs, crayfish) to the extent possible; (9) staging area for fueling and maintenance at least 20 m (66 ft) from the drainage and a spill response plan; minimum foot print as possible, and when riparian and aquatic habitat is present, work between June 15 and October 15 or consult with NMFS, USFWS, CDFW on special-status fish species; and (10) restore stream channel to pre-construction conditions.

In addition, the Lynch Canyon Resource Management Plan, Solano County Multispecies Habitat Conservation Plan, and the USFWS include pre-construction surveys and buffers for special-status avian species (Table 9).

Table 9. Avian nesting buffers identified in the Solano County Multispecies Habitat Conservation Plan, Lynch Canyon Resource Management Plan, and by the USFWS.

Species	Lynch Canyon Resource Management Plan (RMI 1998) Buffer distance [breeding season]	Solano Multispecies Habitat Conservation Plan (LSA Associates 2009) Buffer distance [breeding season]	USFWS¹ Buffer distance
Burrowing owl	75 m (250 ft) [generally 15 Mar through 15 July]	75 m (250 ft) during breeding season; 50 m (160 ft) during non-breeding season [1 Feb–31 Aug]	400 m (1,320 ft)
Golden eagle	0.8 km (0.5 mi) [generally 15 Mar through 15 July]	--	0.8 km (0.5 mi)
Bald eagle	0.4 km (0.25 mi) (identified as 'other raptor') [generally 15 Mar through 15 July]	--	3.2 km (2 mi)
Cooper's hawk	0.4 km (0.25 mi) [generally 15 Mar through 15 July]	--	--
Sharp-shinned hawk	0.4 km (0.25 mi) [generally 15 Mar through 15 July]	--	--
Swainson's hawk	0.4 km (0.25 mi) (identified as 'other raptor') [generally 15 Mar through 15 July]	0.4 km (0.25 mi) if nest is present prior to construction and 0.1 mi (500 ft) if nest becomes occupied during construction [15 Mar–31 Aug]	0.4 km (0.25 mi)
Ferruginous hawk	45 m (150 ft) [generally 15 Mar through 15 July]	--	1.6 km (1 mi)
Red-tailed hawk	45 m (150 ft) [generally 15 Mar through 15 July]	--	--
Northern harrier	45 m (150 ft) [generally 15 Mar through 15 July]	No buffer. [15 Mar–31 Aug]	--
Peregrine falcon	0.4 km (0.25 mi) (identified as 'other raptor') [generally 15 Mar through 15 July]	--	0.8 km (0.5 mi)
White-tailed kite	0.4 km (0.25 mi) [generally 15 Mar through 15 July]	--	--
Short-eared owl	0.4 km (0.25 mi) (identified as 'other raptor')	--	0.4 km (0.25 mi)

Species	Lynch Canyon Resource Management Plan (RMI 1998) Buffer distance [breeding season]	Solano Multispecies Habitat Conservation Plan (LSA Associates 2009) Buffer distance [breeding season]	USFWS ¹ Buffer distance
	[generally 15 Mar through 15 July]		
Great horned owl	60 m (200 ft) [generally 15 Mar through 15 July]	--	--
Red-tailed hawk and 'other raptors'	45 m (150 ft) [generally 15 Mar through 15 July]	--	--
Tri-colored blackbird	--	76 m (250 ft) [1 Feb–31 Aug]	--
Passerines	--	15 m (50 ft) [1 Feb–31 Aug]	--

¹ S. Sandman, pers. comm., 2012.

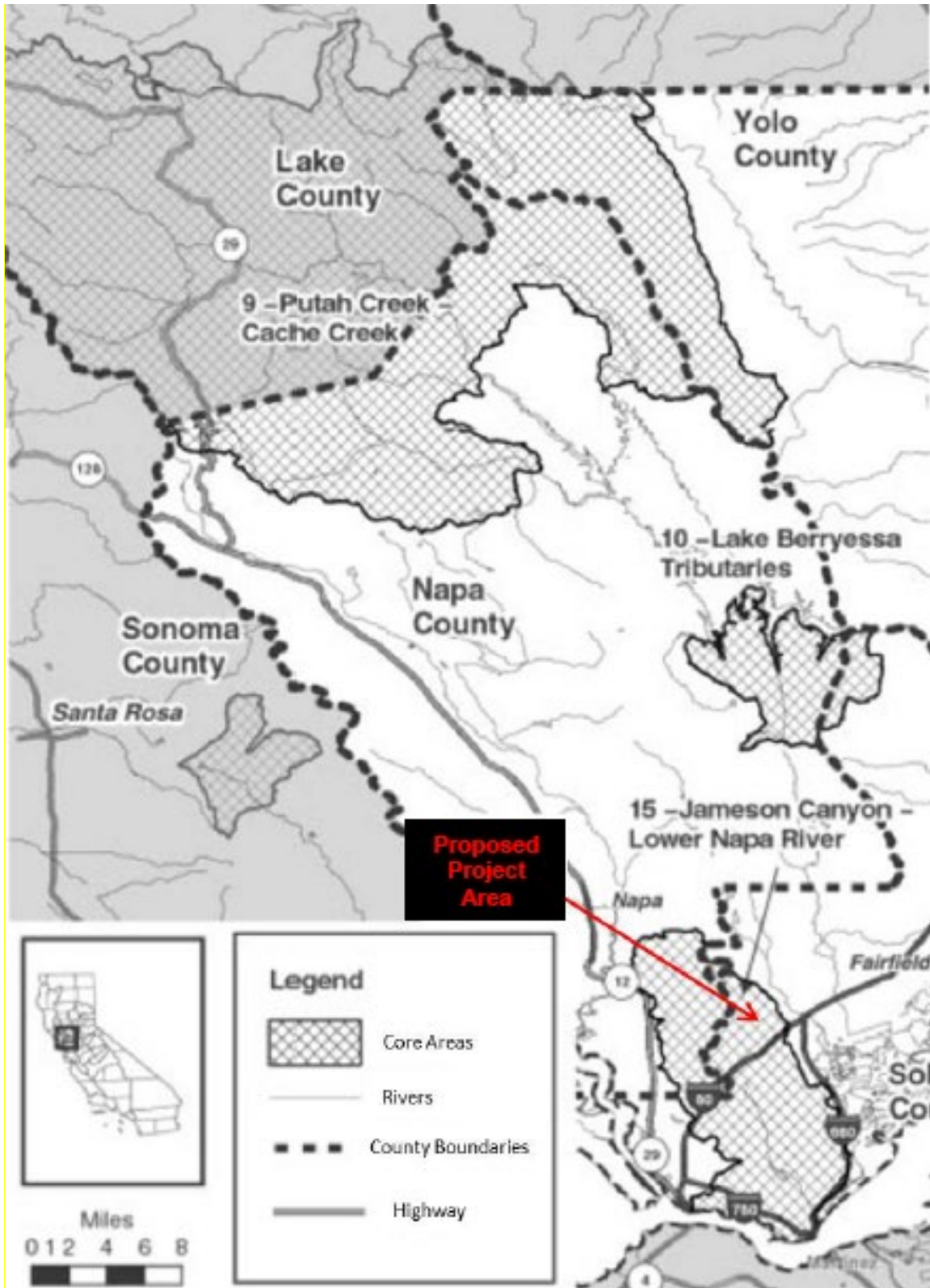


Figure 14. California red-legged frog core recovery area (USFWS 2002).

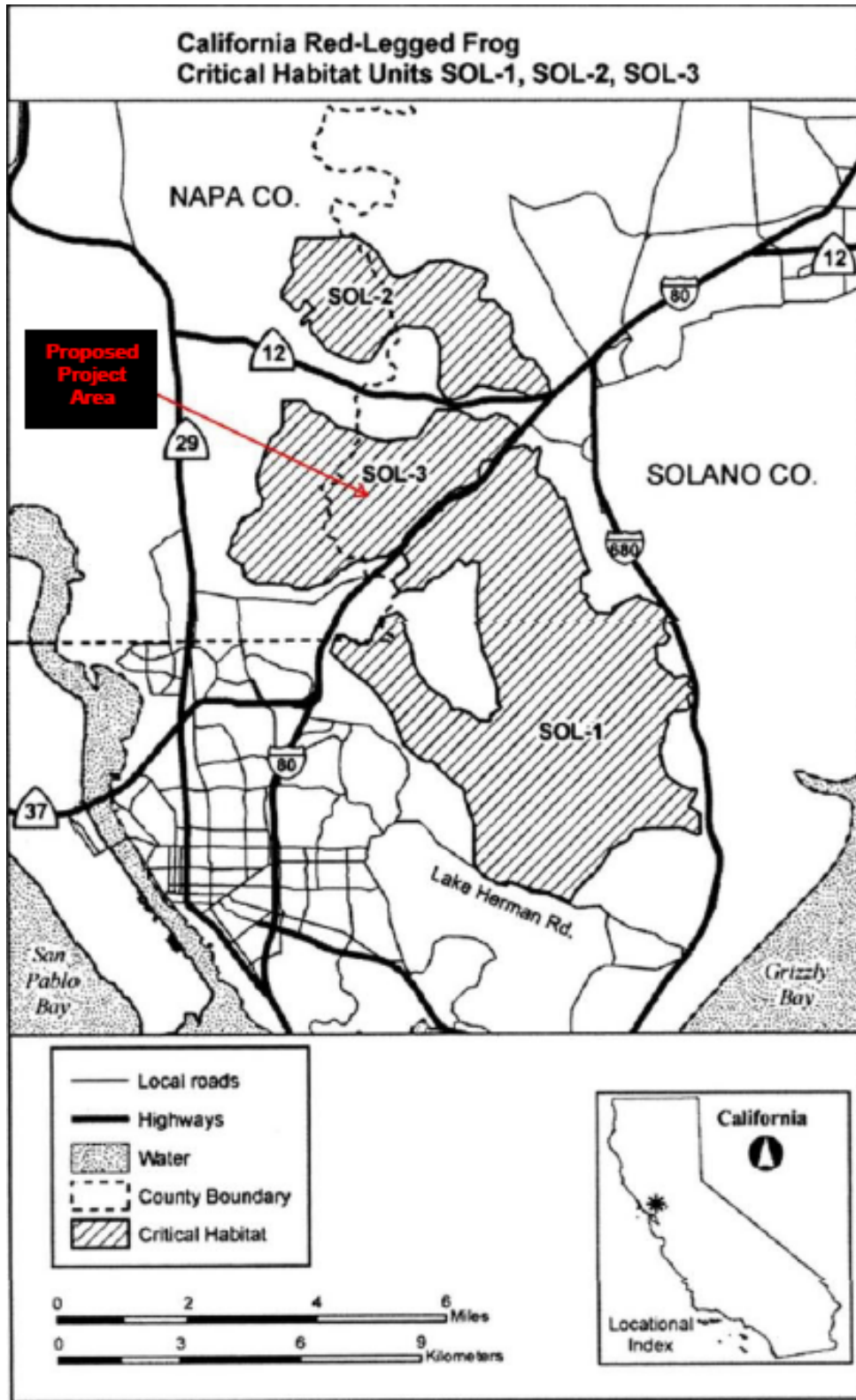


Figure 15. Designated California red-legged frog critical habitat near the Proposed Project (USFWS 2010).

2.6.5 Findings

Species-specific findings

- (a) ***Would the project 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?***

The Proposed Project was evaluated to assess potential impacts on biological resources in the Proposed Project Area. The following long-term habitat modifications and short-term construction impacts associated with the Proposed Project were evaluated to determine the potential for impacts on special-status species and their habitats.

- Seasonal diversion of 47 af of water from the unnamed creek locally known as the North Fork of Lynch Canyon Creek;
- Permanent removal of 0.9 m (3 ft) of spillway height from the existing dam;
- Permanent removal of 2.1 ha (5.1 ac) of the reservoir surface area;
- Temporary disturbance of habitat near the dam spillway and along the southwestern shoreline of the reservoir;
- Temporary disturbance of habitat in soil spreading areas 0.2 ha (0.5 ac), equipment staging areas 0.2 ha (0.5 ac), and rock stockpile area 0.03 ha (0.07 ac);
- Temporary and potential mobilization of sediment in the water column depending on height of the reservoir level at the time of construction; and
- Temporary noise, vibrations, and/or the risk of oil leaks from vehicles (e.g., excavator, bulldozer, dump trucks).

Potential impact on Central California Coast steelhead

As determined in coordination with CDFW, the Central California Coast steelhead limit of anadromy (LOA) is located within the Proposed Project Area – just downstream of the confluence of the south and north forks of Lynch Canyon Creek (Figure 8). The location of the LOA was identified based on a site visit

conducted on April 15, 2008, where staff from Division of Water Rights and CDFW indicated that Lynch Canyon Creek downstream of the confluence may provide spawning and rearing habitat for steelhead.

Results from the WAA and hydrologic assessment, detailed in Section 4 of the WAA, indicate that the CFII is 14.6% at the POD and 4.7% at the LOA. This indicates that the Proposed Project would not dewater the stream reach upstream of the LOA during the 2002 Draft Guidelines supply season (December 15 to March 31), as recommended for on-stream reservoirs (CDFG and NMFS 2002), and that there would not be a significant cumulative reduction in the unimpaired water supply at or downstream of the LOA. As a result, during the supply season recommended by the 2002 Draft Guidelines, the Proposed Project diversion would not significantly impact winter Central California Coast steelhead. For the portion of the Proposed Project's diversion season that is outside of the 2002 Draft Guidelines supply season (October 1 to December 15 and March 31 to June 1), water diversion under the Proposed Project would not significantly impact overlapping life histories (upstream migration, incubation, and rearing) because (1) the reservoir would typically reach 100 percent capacity in October or November and (2) would be at 100 percent capacity through May and into June—during these periods any water entering upstream of the reservoir would continue downstream via the spillway (Table 5 and Figure 9). In addition, it is noted that Corinne Gray (CDFW) assessed the need for bypass flow during the proposed diversion season and determined that no bypass flows were necessary due to the lack of benefit to downstream resources (Stillwater Sciences 2013). This is due to the primarily non-consumptive use of water held within the reservoir, and the fact that the reservoir would typically spill early in the proposed diversion season (i.e., December [see also Table 5, Figure 9]).

Construction-related activities resulting in reduced water quality could result in injury or mortality on Central California Coast steelhead, and this would be a significant impact. Including the Mitigation Measure WQ-1 and Mitigation Measure GS-2, substantially as written, in any permit issued pursuant to water right application 30949, would reduce potential impacts on Central California Coast steelhead to a less than significant level.

Potential impact on foothill yellow-legged frog

The North Fork of Lynch Canyon Creek has the potential, but is unlikely, to provide suitable breeding habitat for the foothill yellow-legged frog, as the creek provides shallow, low-flow habitat with primarily silt substrate, rather than cobble or boulder, which is preferred by this species. However, if the foothill yellow-legged frog is present, particularly at the designated LOA and downstream, the only Proposed Project activity that has the potential to affect the frog includes the proposed seasonal diversion of 47 af from North Fork of Lynch Canyon Creek.

A summary of results from the WAA and hydrologic assessment, detailed in Section 4 of the WAA, identified potential impacts during the Proposed Project diversion season (October 1 to June 1) and outside of the Proposed Project diversion season (June 2 to September 30). During the supply season recommended by the 2002 Draft Guidelines (December 15 to March 31) the Proposed Project would not dewater the stream reach upstream of the LOA. There would be no significant cumulative reduction in the unimpaired water supply at or downstream of the LOA that would impact the breeding activities of the foothill yellow-legged frog. The Proposed Project diversion season that is outside of the 2002 Draft Guidelines supply season includes October 1 to December 15 and March 31 to June 1. Life stages that overlap with October 1 through December 15 include the late-breeding and late-metamorphosing stages. Fall rains in October and early-November would be diverted and stored in the reservoir (Figure 9); however, diversion of water would not occur during the peak sensitive breeding activities and impacts would not be considered significant. The timing from March 31 to June 1 overlaps with breeding, oviposition, and hatching; however, the reservoir would be at 100 percent capacity through April and any water entering the reservoir would continue downstream (Table 5 and Figure 9). Therefore, foothill yellow-legged frogs would not be significantly impacted by the seasonal diversion of up to 47 af from North Fork of Lynch Canyon Creek, water storage in an existing reservoir, or water uses.

Construction-related activities resulting in reduced water quality could result in injury or mortality on foothill yellow-legged frog, and this would be a significant impact. Including the Mitigation Measure WQ-1 and Mitigation Measure GS-2, substantially as written, in any permit issued pursuant to water right application 30949, would reduce potential impacts on foothill yellow-legged frog to a less than significant level.

Potential impact on California red-legged frog and western pond turtle

Lynch Canyon Reservoir currently provides habitat for the California red-legged frog and western pond turtle. The proposed lowering of the reservoir surface elevation by 1 m (3 ft) will decrease the existing reservoir volume from 79 af to 47 af and reduce the quantity of available aquatic habitat available to the red-legged frog and western pond turtle. The wetland boundary is expected to shift to the new reservoir surface level; however, this would result in no significant loss to shallow California red-legged frog breeding habitat and no net loss of wetlands (Stillwater Sciences 2012). Overall, the amount of suitable habitat for California red-legged frog would not significantly change. Similarly, the amount of suitable habitat for the western pond turtle would not significantly change.

The diversion season (October 1 to June 1) overlaps with California red-legged frog breeding, egg hatching, and metamorphose stages and the reservoir provides suitable ponded habitat for this species to support these life history

requirements. Similarly, diverting water into the reservoir would also provide habitat for the western pond turtle. Therefore, the action of diverting water would not impact California red-legged frog or western pond turtle.

Direct effects to the California red-legged frog and western pond turtle from construction activity may include short-term increases in noise, vibration, or degraded water quality (i.e., increased turbidity from disturbance of sediment or toxic substances used during construction [e.g., gasoline, lubricants] released as a result of spills or leakage from machinery or storage containers) during near or in-water construction activities. This may result in localized disturbance of adult, juvenile, or larval California red-legged frogs, potentially resulting in stress, disruption of essential behaviors, or physiological impairment. In the short-term, mortality of individuals may occur from use of heavy equipment. Construction is anticipated to occur over a period of approximately two weeks between September and mid-October which overlaps with the California red-legged frog breeding season (June 15–October 15) and western pond turtle breeding season (spring through early fall unless hatchlings overwinter and emerge the following spring) and mortality of individuals and eggs may occur. Indirect impacts may also result in short-term modification of suitable basking, breeding, and aquatic habitat within the Construction Footprint during construction activities. These construction-related activities would result in significant impacts if California red-legged frog or western pond turtle are present in the construction area and have the potential of being harmed. Including Mitigation Measure WQ-1 and the following mitigation measures (BIO-1, BIO-2, and BIO-3), substantially as written, in any permit issued pursuant to water right application 30949, would reduce potential impacts on California red-legged frogs and western pond turtles to a less than significant level:

Mitigation Measure BIO-1 – Environmental Awareness Training: *Prior to initiating construction activities, a qualified biologist shall provide an environmental awareness training to all construction personnel before construction begins, which may include information about sensitive resources that may be affected by the project, protection measures, and penalties associated with those resources.*

Mitigation Measure BIO-2 – Conduct Pre-Construction Survey for Red-Legged Frog: *Within 14 days prior to the onset of construction activities, a qualified biologist shall survey for California red-legged frog (*Rana draytonii*) and western pond turtle (*Actinemys marmorata*) within any suitable aquatic or upland nesting habitat located within 100 feet of construction areas. The biologist will be familiar with the life cycle of each species and will conduct appropriate surveys for the applicable life stage for each species.*

*If California red-legged frogs (*Rana draytonii*) or western pond turtles (*Actinemys marmorata*) are observed during the pre-construction surveys, the right holder shall cease all construction activity and consult with the United States Fish and Wildlife Service and/or the California Department of Fish and*

*Wildlife to determine an appropriate course of action. A qualified biologist shall be present onsite during construction to monitor for presence of California red-legged frogs (*Rana draytonii*) and western pond turtles (*Actinemys marmorata*) and to ensure that impact avoidance and minimization measures prescribed or approved by the California Department of Fish and Wildlife and United States Wildlife Service are implemented throughout the construction period.*

Right holder shall submit a report documenting compliance with the provisions of this term to the Deputy Director for Water Rights no more than 30 days after construction is complete.

Mitigation Measure BIO-3 – Limit Construction Season: *Construction activities within 100 feet of any surface stream, as identified in Figure 10 of the Lynch Canyon Reservoir Initial Study/Mitigated Negative Declaration, shall only occur between June 15 and October 15 to minimize the potential for direct impacts to California red-legged frogs (*Rana draytonii*).*

Potential impact on least bittern

Although the Proposed Project Area is outside of the typical range of this species, suitable nesting habitat includes emergent vegetation, which is present in a relatively small area of tall, dense emergent vegetation along the reservoir fringe (Table 7). In the long-term, while the Lynch Canyon Reservoir surface area would decrease from 5.1 ha to 3.3 ha [12.6 ac to 8.1 ac], the reservoir would still support shallow, shoreline habitat within which emergent vegetation stands could establish. Thus, in the long-term the extent of emergent vegetation within the reservoir, and hence potentially suitable nesting habitat for least bittern, would not be substantially reduced by the Proposed Project and there would be no long-term impact.

If the least bittern is present within the Proposed Project Area, the proposed construction activities would occur between mid-August and October, which would be outside of the peak breeding season (mid-March through July) for this species (note that the species may breed from May through August [Poole et al. 2009]). Indirect short-term impacts may include modification of suitable ground nesting habitat within the Construction Footprint and/or short-term effects on foraging habitat near the reservoir, both due to general construction activities. If least bittern individuals are breeding in the vicinity of the Construction Footprint, construction-related impacts may include direct mortality of eggs due to removal of the nest and potential indirect mortality of eggs or young due to noise from heavy equipment that causes adults to abandon the nest. This would be a significant impact. Direct mortality of eggs or young would be a significant impact. Including the following mitigation measure, substantially as written, in any permit issued pursuant to water right application 30949, would reduce potential impacts on least bittern to a less than significant level:

Mitigation Measure BIO-4 – Conduct Pre-Construction Survey for Nesting Bird Species: *Within 14 days prior to the onset of construction activities, a qualified biologist shall conduct a pre-construction survey for the purpose of identifying nesting bird species. The pre-construction survey shall include all potential nesting habitat within 500 ft of proposed construction areas. If an active raptor or migratory bird nest is found during the pre-construction survey, the right holder shall notify the California Department of Fish and Wildlife and the United States of Fish and Wildlife Service. If an active raptor nest is found during the pre-construction survey, a 500 ft no-disturbance buffer shall be established and maintained around the nest until all young have fledged. If an active nest of any other migratory or non-migratory bird is found, a 250 ft no-disturbance buffer shall be established around the nest until all young have fledged. Right holder shall submit a report documenting compliance with the provisions of this term to the Deputy Director for Water Rights no more than 30 days after construction is complete.*

Potential impacts on northern harrier

Suitable nesting habitat is present within grasslands and shrub habitat within the Proposed Project Area and foraging has been documented nearby (Table 78). Implementing the Proposed Project seasonal diversion of up to 47 af into the existing on-stream reservoir would not impact foraging habitat and prey (e.g., rodents, frogs) in areas surrounding the reservoir.

Activities during construction (mid-August through October) are unlikely to affect breeding of these species as the peak breeding season is March 15 through July 15 (RMI 1998); the comprehensive breeding season for northern harrier is March 15 through August 31 (LSA Associates 2009). Indirect construction-related effects may include short-term effects on foraging habitat near the reservoir during construction. Depending on the proximity of construction activities to nesting habitat, direct construction-related effects may include (1) noise (e.g., from heavy equipment) during construction may lead to short-term disturbance of nesting birds and possibly nest abandonment, and thereby, potential mortality of young and (2) mortality of eggs or juveniles nesting in emergent vegetation or on the ground within the Construction Footprint may occur if heavy equipment is used or construction materials are placed in areas with active nests. Direct impacts to eggs or young would be a significant impact. Including the Mitigation Measure BIO-4, substantially as written, in any permit issued pursuant to water right application 30949, would reduce potential impacts on northern harrier to a less than significant level.

Potential impacts on white-tailed kite, Swainson's hawk, ferruginous hawk, bald eagle, and golden eagle

Suitable foraging habitat is present within the Proposed Project Area and nesting habitat is present in the vicinity. Implementing the Proposed Project seasonal diversion of up to 47 af into the existing on-stream reservoir would not impact foraging habitat and prey (e.g., small mammals) in areas surrounding the reservoir.

Activities during construction (mid-August through October) are unlikely to affect breeding as the peak breeding season is March 15 through July 15 (RMI 1998); the comprehensive breeding season for white-tailed kite is early February through early-August (Dunk 1995), Swainson's hawk is March 15 through August 31 (LSA Associates 2009), ferruginous hawk is mid-March through mid-August (Bechard and Schmutz 1995), bald eagle is late March through mid-September (Buehler 2000), and golden eagle is late March through late August (Kochert et al. 2002). Indirect construction-related effects may include short-term modification of foraging habitat near the reservoir during construction. The following construction-related direct effects may occur if pairs are continuing to nest into the construction season and depending on the proximity of construction activities to nesting habitat: (1) noise (e.g., from heavy equipment) during construction may lead to short-term disturbance of nesting birds and possibly nest abandonment, and thereby, potential mortality of young; and (2) individuals foraging may be temporarily displaced. Direct mortality to eggs or young would be a significant impact. Including the Mitigation Measure BIO-4, substantially as written, in any permit issued pursuant to water right application 30949, would reduce potential impacts on white-tailed kite, Swainson's hawk, ferruginous hawk, bald eagle, and golden eagle to a less than significant level.

Potential impacts on American peregrine falcon

Suitable foraging habitat is present for the American peregrine falcon in the Proposed Project Area. Implementing the Proposed Project seasonal diversion of up to 47 af into the existing on-stream reservoir would not impact foraging habitat and prey (e.g., birds, small mammals) in areas surrounding the reservoir. No nesting habitat is present within or near the Proposed Project Area; therefore, no direct impacts to breeding will occur. If present during construction activities, direct effects may include temporary displacement of foraging individuals due to construction noise. Indirect construction-related effects may include short-term modification of foraging habitat near the reservoir during construction.

Protection measures for the American peregrine falcon are not necessary because significant impacts are not anticipated as a result of the Proposed Project.

Potential impacts on short-eared owl

Suitable ground-nesting habitat is present within marshlands and grasslands in the Proposed Project Area and foraging has been documented in the near area (Table 78). Implementing the Proposed Project seasonal diversion of up to 47 af into the existing on-stream reservoir would not impact foraging habitat and prey (e.g., small mammals) in areas surrounding the reservoir. Activities during the construction season (mid-August through October) are unlikely to directly affect breeding of these species as the comprehensive breeding season for short-eared owl is mid-March through late-June (Wiggins et al. 2006). Direct construction-related effects may include temporary displacement of foraging individuals due to construction noise. Indirect construction-related effects may include short-term modification of foraging habitat near the reservoir during construction.

Protection measures for the short-eared owl are not necessary because significant impacts are not anticipated as a result of the project.

Potential impacts on burrowing owls

Suitable ground nesting and foraging habitat is present in grassland habitats and they have been observed in the near area (Table 78). Implementing the Proposed Project seasonal diversion of up to 47 af into the existing on-stream reservoir would not impact foraging habitat and prey (e.g., insects, amphibians, small mammals) in areas surrounding the reservoir.

Activities during the construction season (mid-August through October) are unlikely to affect breeding of these species as the peak breeding season is mid-March through mid-July; the comprehensive breeding season is February 1 through August 31 (CDFG 2012). Indirect construction-related effects may include short-term modification of suitable ground nesting habitat within the Construction Footprint during construction activities and short-term effects on foraging habitat near the reservoir during construction. The following direct effects may occur if present: (1) depending on the proximity of construction activities to nesting habitat, noise (e.g., from heavy equipment) during construction may lead to short-term disturbance of nesting birds and possibly nest abandonment, and thereby, potential mortality of young; and (2) mortality of eggs, juveniles, and adults may occur if heavy equipment is used or construction materials are placed in areas with active burrows during the breeding season, or year-round residents during the non-breeding season. Mortality of eggs or young would be a significant impact. Including the following mitigation measure, substantially as written, in any permit issued pursuant to water right application 30949, would reduce potential impacts on burrowing owls to a less than significant level:

Mitigation Measure BIO-5 – Pre-Construction Survey for Burrowing Owl:

*Within 14 days prior to the start of construction, a qualified biologist shall conduct a pre-construction survey for active burrowing owl (*Athene cunicularia*) burrows using methods identified in the California Department of Fish and Wildlife 2012 Staff Report on Burrowing Owl Mitigation. The pre-construction survey shall include all potential nesting habitat within 500 ft of proposed construction areas.*

*If occupied burrowing owl (*Athene cunicularia*) nests are found, Permittee shall establish no-disturbance buffers around each nest within which no disturbance resulting from construction may occur unless a qualified biologist verifies through non-invasive methods that either the owls occupying the nests have not begun egg-laying and incubation, or that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Buffers ranging from fifty to five hundred meters in diameter shall be established around occupied nest sites in accordance with the provisions of the California Department of Fish and Wildlife 2012 Staff Report on Burrowing Owl Mitigation.*

Right holder shall submit a report documenting compliance with the provisions of this term to the Deputy Director for Water Rights no more than 30 days after construction is complete.

Potential impacts on purple martin and yellow warbler

There is a low likelihood of the purple martin and yellow warbler to be present and affected by the Proposed Project as the Proposed Project Area is outside of the typical range of the species. Implementing the Proposed Project seasonal diversion of up to 47 af into the existing on-stream reservoir would not impact foraging habitat and prey (e.g., insects) in areas surrounding the reservoir.

If present, the yellow warbler breeding season (late-March through early August) (Lowther et al. 1999) is not anticipated to overlap with the construction season (mid-August through October). Indirect construction related-effects may include short-term modification of foraging habitat near the reservoir during construction. Purple martin nesting habitat is limited and activities during the construction season would occur outside of the peak breeding season (mid-April through late-July); comprehensive breeding period is April through mid-August (Tarof and Brown 1997). If breeding pairs are present and the breeding season extends beyond the anticipated end date, the following construction-related direct effects may occur: (1) depending on the proximity of construction activities to nesting habitat direct effects may include noise (e.g., from heavy equipment) during construction may lead to short-term disturbance of nesting birds and possibly nest abandonment, and thereby, potential mortality of young and (2) foraging individuals may be temporarily displaced. Mortality of eggs or young would be a significant impact. Including the Mitigation Measure BIO-4, substantially as written, in any permit issued pursuant to water right application

30949, would reduce potential impacts on purple martin and yellow warbler to a less than significant level.

Potential impacts on tricolored blackbird

The total area of emergent vegetation in the marshlands is unlikely to provide enough habitat to support a nesting colony; the comprehensive breeding season for tricolored blackbird is February 1 through August 31 (LSA Associates 2009). Implementing the Proposed Project seasonal diversion of up to 47 af into the existing on-stream reservoir would not impact foraging habitat and prey (e.g., insects) in areas surrounding the reservoir.

Construction-related activities were evaluated for potential impacts on the tricolored blackbird. Indirect construction-related effects may include short-term effects on foraging habitat near the reservoir during construction. The following construction-related direct effects may occur if nesting is occurring during the construction season (mid-August through October): (1) noise (e.g., from heavy equipment) may lead to short-term disturbance of nesting birds and possibly nest abandonment, and thereby, potential mortality of young, and (2) mortality of eggs, juveniles, and adults may occur if heavy equipment is used or construction materials are placed in areas with active nests during the breeding season. Mortality of eggs or young would be a significant impact. Including the Mitigation Measure BIO-4, substantially as written, in any permit issued pursuant to water right application 30949, would reduce potential impacts on tricolored blackbird to a less than significant level.

Potential impact on pallid bat

Pallid bat may forage over terrestrial habitat in areas surrounding the reservoir; however, there is a very low potential for pallid bat to be roosting in the Proposed Project Area. During a recent site visit in April 2013, Corinne Gray of CDFW determined that the rip-rap, previously identified as potential habitat, was not likely suitable to support the species. Implementing the Proposed Project seasonal diversion of up to 47 af into the existing on-stream reservoir is not anticipated to impact foraging habitat and prey (e.g., beetles, scorpions, termites) in areas surrounding the reservoir. In the unlikely event the species is present, individuals would be displaced; however, no mortality is anticipated as the prime maternity season, which is typically early May through late August, does not overlap with construction timing (two weeks between September to mid-October) and individuals would likely fly away once machinery and ground disturbance began. Because no construction will occur at night, there are no direct effects on foraging bats or the unlikely event species are using the rip-rap as a night roost.

Protection measures for the pallid bat are not necessary because significant impacts are not anticipated as a result of the project.

Potential impact on the American badger

The American badger has the potential to occur in grassland habitats surrounding the reservoir. Implementing the Proposed Project seasonal diversion of up to 47 af into the existing on-stream reservoir may provide foraging habitat and prey (e.g., small and medium-sized mammals) in areas surrounding the reservoir.

Construction-related activities were evaluated for potential impacts on the American badger. Indirect construction-related effects may include short-term modification of suitable badger denning and foraging habitat during construction activities. Factors such as construction noise (e.g., heavy equipment) may lead to short-term displacement of badgers or natal den abandonment, if present. Any noise disturbance would be short-term. Direct mortality may occur if a den is present within the Construction Footprint. However, this is not anticipated as the anticipated timing of construction season (mid-August through October) would not likely overlap with the period of time when litters are typically born and cubs are weaned (March and June). However, if present, mortality of American badger would be a significant impact. Including the following mitigation measure, substantially as written, in any permit issued pursuant to water right application 30949, would reduce potential impacts on American badger to a less than significant level:

Mitigation Measure BIO-6 – Pre-Construction Survey for American Badger:
Within 14 days prior to the start of construction, a qualified biologist shall conduct a pre-construction survey for the purpose of identifying any potential denning habitat for the American badger (Taxidea taxus). The pre-construction survey shall include all potential denning habitat within or adjacent to the construction footprint. If denning habitat is found during the pre-construction survey, right holder shall consult with the California Department of Fish and Wildlife to identify and implement acceptable impact avoidance and minimization measures. Measures that would be considered include, but are not limited to establishing suitable no-disturbance construction buffers around active den sites (e.g., 50 ft) and active natal/pupping dens site (e.g., 250 ft), passive relocation, and for dens that are inactive to be collapsed by hand to prevent occupation. Right holder shall submit a report documenting compliance with the provisions of this term to the Deputy Director for Water Rights no more than 30 days after construction is complete.

Other biological resource findings

(a) (i). Would the project result in a substantial increase or threat from invasive, non-native plants and wildlife?

Non-native grassland habitat dominates the Proposed Project Area. The existing, unpermitted on-stream reservoir supports emergent wetlands along the reservoir shoreline, bordered by primarily non-native upland grasses (see Figure 16 in Section 2.6.5.2 (c)). Decreasing the reservoir volume from 79 af to 47 af is expected to shift the upland/wetland boundary toward the new reservoir surface level (see additional discussion under Section 5 (c)), increasing the extent of grassland habitat compared to existing conditions. While it is possible that native grass species would colonize the newly exposed areas, it is more likely that non-native species would continue to dominate the grassland community in these areas, particularly since livestock grazing would also occur in the new grasslands. However, as the newly exposed areas along the reservoir sides and the dam face represent a relatively small increase in total acreage, the potential increase in non-native grassland species due to the decreasing reservoir volume under the Proposed Project would be less than significant.

Non-native grasslands also represent the dominant grass species in the meadow immediately downstream of the POD. Compared with existing conditions, an increase in the frequency of reservoir spilling to the meadow may discourage continuous livestock grazing in this area during the diversion season and may encourage colonization of native grassland habitat species over the more dominant non-native species found in association with grazed uplands in the Proposed Project Area. However, given the uncertainty in the response of grassland species to a small increase in seasonal flooding, it is more likely that there would be no net gain in either native or non-native grassland habitat in the meadow and thus, potential effects of the Proposed Project would be less than significant.

The perennial storage of water in the reservoir provides habitat for American bullfrog, which, if not already present, has the potential to establish a population in the existing reservoir over time. Bullfrogs are known to prey upon and out-compete native amphibians (CDFW 2018). Decreasing the reservoir volume from 79 af to 47 af would decrease the amount of aquatic habitat available for this non-native species; however, due to their high predation rates, the presence of American bullfrog is likely to result in a significant impact on California red-legged frog.

Implementation of Mitigation Measure BIO-7, an American Bullfrog Eradication Plan, that will be developed and implemented in consultation with the USFWS and CDFW, and Mitigation Measure BIO-8 would decrease the potential for the presence of American bullfrog under the Proposed Project. With Mitigation Measures BIO-7 and BIO-8, substantially as written, in any permit issued pursuant to water right application 30949, would reduce potential impacts on California red-legged frog from non-native wildlife species to a less than significant level.

Mitigation Measure BIO-7 – Implement American Bullfrog Eradication Plan: Right holder shall develop and implement, in consultation with the USFWS and CDFW, an American Bullfrog Eradication Plan for Lynch Canyon Reservoir that is satisfactory to the Deputy Director for Water Rights. The plan shall address control of American bullfrog (*Lithobates catesbeianus*) in Lynch Canyon Reservoir, with eradication of the bullfrog from the reservoir as the ultimate goal. Right holder shall submit a report on American Bullfrog Eradication Plan activities in accordance with the time schedule contained in the American Bullfrog Eradication Plan, and whenever requested by the Division of Water Rights. The Deputy Director for Water Rights may require modification of the American Bullfrog Eradication Plan upon a determination that the plan is ineffective or unsuccessful, or provide relief from this term upon a determination that the American Bullfrog Eradication Plan is no longer required.

The American Bullfrog Eradication Plan shall be developed and implemented by qualified individual(s) approved by the Deputy Director for Water Rights, and at a minimum, shall provide the following information:

- a. A description of the method by which non-native species present or potentially present in the reservoir will be identified;
- b. A description of the approach that will be used to control, with the intention to eradicate, the species from the reservoir if American bullfrog is present, including the method and the frequency of applying the method;
- c. A description of the criteria that will be used to evaluate the effectiveness and success of the control method;
- d. A description of the program that will be used to monitor the effectiveness and success of the control method;
- e. A description of how the approach will be supplemented or modified if the monitoring program indicates that the current control plan is not effective or successful;
- f. A time schedule for periodic inspection of the reservoir and control of American bullfrog from the reservoir, if present; and
- g. A time schedule for the periodic submittal of reports on control plan activities that describe the control methods or approaches used, the frequencies that the methods and approaches were applied, the results of effectiveness monitoring efforts, an evaluation of the effectiveness and success of the methods or approaches used, and descriptions of how the methods or approaches used will be supplemented or modified if the monitoring program indicates that ongoing methods or approaches for American bullfrog control are ineffective.

Mitigation Measure BIO-8 – Retain Reservoir Habitat For Native Species: At no point will non-native fish or wildlife species be intentionally introduced into the reservoir.

- (b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

As discussed in Sections 2.5.3 a(i) and a(iii), the potential impacts on riparian habitat downstream of Lynch Canyon Reservoir from the seasonal diversion and storage of up to 47 af of water would be less than significant.

In addition to downstream riparian habitat, the Lynch Canyon Reservoir currently supports emergent wetlands in a narrow fringe along the steeper reservoir sides, a broader fringe along the shallow northwestern end of the reservoir, and three fingers extending north and west of the reservoir (see Figure 16 in Section 2.6.5 (c)). The narrow fringe wetlands along the steeper reservoir sides and the broader fringe wetlands along the shallow northwestern end of the reservoir are presumably fed by surface and groundwater levels controlled by reservoir elevation. Lowering of the reservoir surface elevation by 1 m (3 ft) is expected to shift the upland/wetland boundary toward the new reservoir surface level, resulting in no net loss in the area of these wetlands (Stillwater Sciences 2012).

For the three emergent wetland fingers extending north and west of the reservoir, available land surface elevation data (i.e., 2-ft and 10-ft LiDAR, 10-m DEM) suggests that these wetlands are fed by a source of water other than groundwater controlled by the surface elevation of Lynch Reservoir. While groundwater elevation data are not available and springs or seeps were not identified at or near these locations during the wetland delineation (Stillwater Sciences 2008), the relatively large (6–9 m [20–30 ft) elevation difference between these wetlands and the reservoir water surface suggests that water is being supplied to these wetlands from an elevation significantly higher than the reservoir itself. These wetlands may be fed by upstream springs located outside of the boundary of the Solano Land Trust. Thus, it is anticipated that decreasing the surface of Lynch Canyon Reservoir by 1 m (3 ft) would not measurably affect the extent of emergent wetlands in these fingers.

In the long-term, active open-range, low-density livestock use of the reservoir as a water source would continue year-round in the Proposed Project Area as part of the Proposed Project, which could result in impacts to wetland habitat should the existing cattle exclusion fencing (Figure 10) fail, allowing cattle direct access to a greater area of creek, reservoir shoreline and/or wetland habitat than occurs under existing conditions. This would be a significant impact. Including Mitigation Measure WQ-1, substantially as written, in any permit issued pursuant to water right application 30949, would ensure that cattle would be excluded from the reservoir and associated stream channels, with the exception of an area along

the southwest shoreline of the reservoir (see below), and would decrease this impact to less than significant.

The Proposed Project includes constructing a new cattle exclusion fence around the dam to prevent cattle from accessing the reservoir along the dam embankment, and modifying a portion of the existing fence along the southwest shoreline to allow cattle access to drinking water at the new location (Figure 4a, Figure 10). To assess whether relocating cattle access to the reservoir under the Proposed Project would affect wetlands, the amount of wetlands directly impacted by cattle at the current reservoir access point on the south side of the dam was compared to the amount of wetlands anticipated to be impacted at the new access location on the southwest reservoir shoreline (see Figure 16 in Section 2.6.5). Under existing conditions, cattle directly impact approximately 0.204 acres of fringe emergent wetlands on the south side of the dam (Figure 16) by standing and/or trampling vegetation while drinking water. Under the Proposed Project, wetlands at this location would no longer be impacted because of new cattle exclusion fencing. The reconfigured portion of the existing exclusion fence, to be located between the two yellow dots shown in Figure 10 and Figure 16, will have a 40-foot wide opening to allow cattle to turn around at the water's edge. The modified exclusion fencing will have extensions that angle into deeper reservoir waters to constrain cows to the designated access location. The extent of fringe emergent wetlands directly impacted by cattle along the new reconfigured portion of the fence line will range from 0.035 to 0.048 acres, depending on the exact placement of the fence opening. Overall, under the Proposed Project, direct wetland impacts due to cattle drinking water would be reduced by 0.156–0.169 acres compared with existing conditions and thus there would be no impact on wetlands as a result of relocating cattle access to reservoir water for drinking.

As discussed in 2.6.5 (c), the fringe emergent wetlands present along the dam (Figure 16) potentially are part of the construction footprint. If the wetland delineation is verified by the USACE and wetlands are present, construction related activities could impact these wetlands resulting in a less than significant impact. Implementation of Mitigation Measure BIO-9 provided in Section 2.6.5 (c) (i.e., marking and flagging wetlands with construction fencing), would reduce short-term construction-related impacts on riparian areas and wetlands in the Proposed Project area to less than significant with mitigation.

Overall, impacts on riparian and/or wetland habitat from spillway crest lowering and siphon installation to allow for seasonal diversion and storage of 47 af of water, the addition of new cattle exclusion fencing around the dam, and modification of a portion of the existing livestock exclusion fencing along the southwest reservoir shoreline, would be less than significant. A Lake and Streambed Alteration Agreement pursuant to Section 1602 of the California Fish and Game Code would likely be necessary for the Proposed Project. The Applicants would adhere to all conditions of the agreement. With implementation of Mitigation Measure WQ-1 provided in Section 2.5.3 (b) (i.e., maintaining

existing livestock exclusion fencing around riparian areas and the vegetated portions of the reservoir, as modified by the Proposed Project) and Mitigation Measure BIO-9 provided in Section 2.6.5 (c) (i.e., marking and flagging wetlands with construction fencing), long-term use of the reservoir as a drinking water source for cattle and short-term construction-related impacts on riparian areas and wetlands in the project area would be less than significant with mitigation.

- (c) Would the project have a substantial adverse effect on state and/or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means?

The existing wetland delineation will be verified by USACE as part of the Proposed Project permitting. The fringe emergent wetlands along the dam (Figure 16), although potentially part of the construction footprint, would be avoided during construction activities and, therefore, would not be impacted by the Proposed Project. The spillway, although classified as emergent wetland (Figure 16), is comprised primarily of rip-rap (Figure 17). This area would be temporarily affected during construction when rip-rap is removed to lower the spillway elevation, which would result in a net decrease of fill in the spillway area. No long-term impacts would occur in this area as a result of the construction activities (i.e., spillway crest lowering and installing a siphon).

The Proposed Project seasonal diversion and lowering the height of the spillway crest on Lynch Reservoir by 2 to 3 feet and reduce reservoir capacity from 79 af to 47 af. A prior analysis of the effect of reservoir lowering on the wetland area in the shallow, north-western end of Lynch Reservoir indicated that the area could increase as a result of the Proposed Project (Stillwater Sciences 2012). However, given the uncertainty in groundwater supply at this end of the reservoir, it is more likely that there would be no net loss of wetlands under the proposed project. Emergent wetlands existing as a narrow fringe along the dam face and reservoir “sides” would not likely be affected since available bathymetry data indicate a relatively consistent and steep elevation drop along the shoreline in these locations. Any increase in wetland area along the dam face and reservoir “sides” due to a lowering of the reservoir surface would also likely be accompanied by a corresponding decrease attributable to a shifting of the upland/wetland boundary toward the new reservoir surface, resulting in no net change in wetland area along this narrow fringe. Conversely, the downward shifting in the upland/wetland boundary would result in a slight increase in upland grassland habitat along the dam face and reservoir “sides”.

For the three emergent wetland fingers extending north and west of the reservoir, available land surface elevation data (i.e., 2-ft and 10-ft LiDAR, 10-m DEM) suggest that these wetlands are fed by a source of water other than groundwater controlled by the surface elevation of Lynch Canyon Reservoir. The estimated land surface elevation difference between the upstream-most point of the southern wetland finger and the current reservoir shoreline is approximately 55 m

(180 ft), and that of the middle wetland finger is approximately 64 m (210 ft). While groundwater elevation data are not available and springs or seeps were not identified at or near these locations in the recent wetland delineation (Stillwater Sciences 2008), the large elevation difference between these wetlands and the reservoir water surface suggests that water is being supplied to these wetlands from an elevation significantly higher than the reservoir itself. These wetlands may be fed by upstream springs located outside of the boundary of the Proposed Project Area. Thus, it is anticipated that decreasing the surface of Lynch Canyon Reservoir by 0.9 m (3 ft) would not measurably affect the extent of emergent wetlands in these fingers.

Modifications to the cattle exclusion fence lines, as described in Section 2.6.5 (b), would result in a minor impact to federally and state protected wetlands; however, this impact would be considered less than significant.

Overall, impacts on state and/or federally protected wetlands from spillway crest lowering, siphon installation, or seasonal diversion and storage of 47 af of water would be a less than significant impact. Including mitigation measures WQ-1 and BIO-1, and BIO-9, substantially as written, in any permit issued pursuant to water right application 30949, would ensure potential impacts on wetlands are less than significant with mitigation.

Mitigation Measure BIO-9 – Install Construction Flagging or Fencing to Exclude Construction Activities from Wetlands: *A qualified wetland scientist shall clearly mark with flagging or construction fencing the boundaries of all waters of the State, wetlands, and other waters of the United States located within the construction footprint prior to the commencement of construction activities to exclude construction equipment and construction materials from wetlands.*

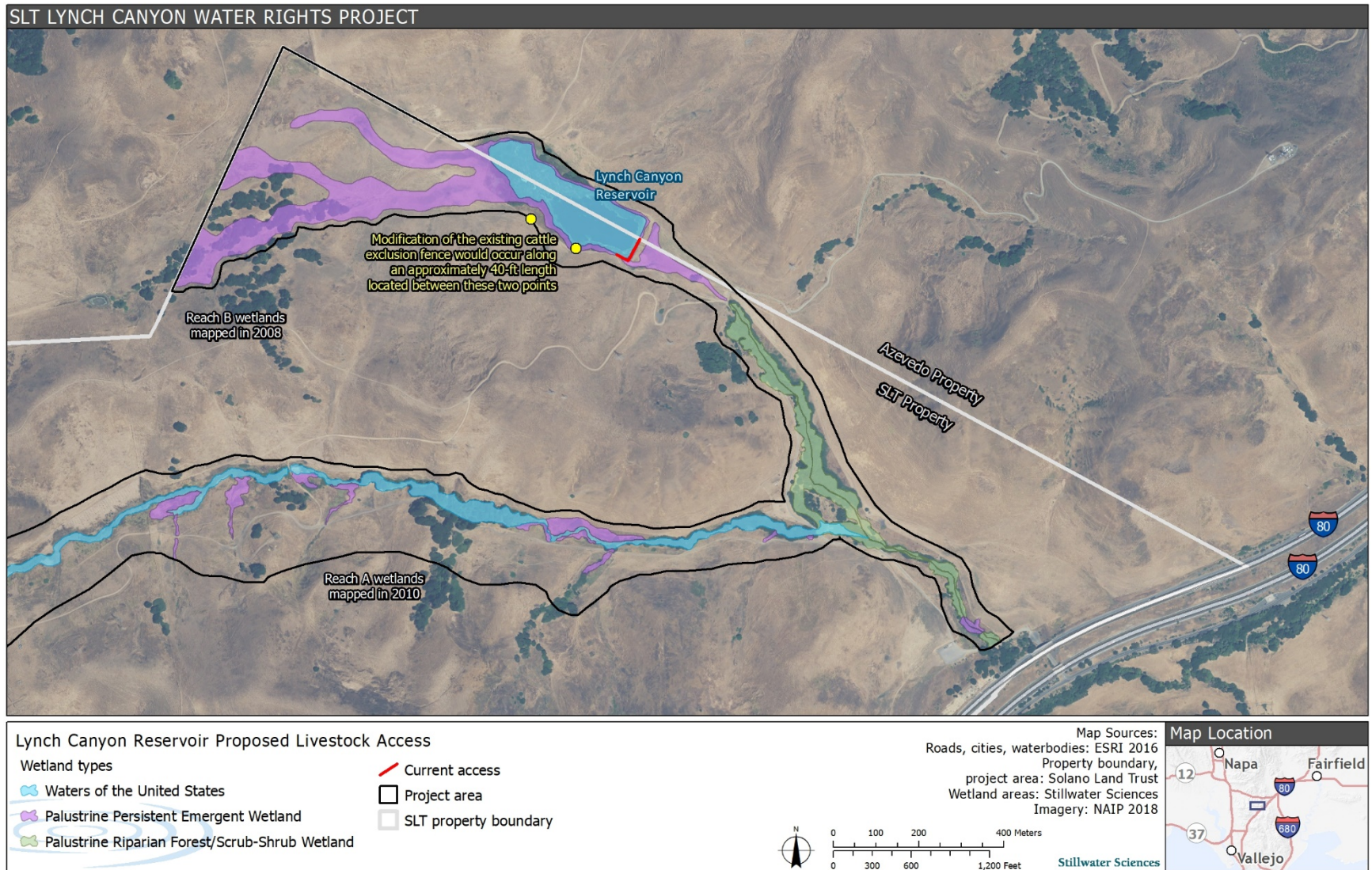


Figure 16. USACE jurisdictional wetlands and waters of the United States within the Proposed Project Area.



Figure 17. The Lynch Canyon Reservoir spillway.

- (d) *Would the project 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 wildlife nursery sites?***

The proposed diversion of 47 af from the North Fork of Lynch Canyon Creek will not substantially interfere with the movement of native resident or migratory fish or wildlife species. The upper limit of anadromy for Central California Coast Steelhead is determined to be the Lynch Canyon Creek, located at the confluence of the south and north forks of Lynch Canyon Creek (POI #4, Figure 8). As detailed in Section 2.5.3 (a) (i) and Section 2.6.5 (a), a water availability analysis (WAA) determined the Proposed Project would result in less than significant impacts. Due to the non-consumptive use of the reservoir, the reservoir will typically spill early in the diversion season, and will not interfere with potential wildlife movement corridors or contribute to the fragmentation of wildlife habitat for biological resources. No significant change in vegetation or habitat is anticipated to preclude connectivity of fisheries or wildlife populations. Because the area upstream of the current Lynch Dam was not historically a large source of large woody debris and gravel to the downstream watershed, nor would it be under existing conditions should the dam be removed, the Proposed Project would not cause a significant decrease in downstream transport of gravel or large woody debris (Figure 5). The impacts would be less than significant.

- (e) *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***

The Solano County General Plan (DRM 2008) identifies policies (RS.1-3 and RS.P-6) to protect oak woodlands and heritage trees and encourage the planting of native tree species in new developments and along road rights-of-way. The Proposed Project does not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. As such, there is no impact.

(f) *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or State habitat conservation plan?*

As discussed in 2.6.5 Biological Resource item a above, mitigation measures BIO-1, BIO-2, BIO-3, BIO-7 and BIO-8 have been designed to protect the California red-legged frog and include, but are not limited to, working outside of the breeding season, conducting pre-construction surveys, onsite biological monitoring, maintenance and maintain existing livestock exclusion fencing around the reservoir and associated stream channels, developing and implementing an acceptable invasive species control plan, and preventing the intentional introduction of non-native fish into the reservoir. These mitigation measures are consistent with those identified in RLF 3 within the Solano Multispecies Habitat Conservation Plan (Table 10) (LSA Associates 2009). Implementation of these mitigation measures would ensure that the Proposed Project does not conflict with biological resource policies identified in the Solano County General Plan.

As discussed in Section 2.6.5 (a) above, mitigation measures BIO-4 and BIO-5 are specifically designed to protect special-status nesting bird species and include pre-construction surveys, implementing no-disturbance buffers, and coordination with USFWS and/or CDFW. These measures are generally consistent with the Solano County Multispecies Habitat Conservation Plan (Table 10). The burrowing owl avoidance and mitigation measures (e.g., pre-construction surveys, buffers, agency coordination) are consistent with the recent CDFW *Staff report on burrowing owl mitigation* (CDFG 2012).

Table 10. Avoidance and minimization measures identified in the Solano Multispecies Habitat Conservation Plan (LSA Associates 2009).

<p>California red-legged frog</p>	
<p>RLF-3</p>	<p>As identified in the Solano Multispecies Habitat Conservation Plan (LSA Associates 2009), the avoidance and minimization measures listed in RLF3 are for projects resulting in impacts to aquatic habitat that is known to or has the potential to support California red-legged frogs, the following BMPs shall apply:</p> <ol style="list-style-type: none"> 1. At least 15 days prior to the onset of activities, the Applicants shall submit the name(s) and credentials of biologists who will conduct activities associated with red-legged frogs. No project activities shall begin until the project proponent has received written approval from Solano County Water Agency (SCWA). 2. The approved biologist(s) shall survey the work site two weeks prior to the onset of construction activities. Any life stage of California red-legged frogs (adults, tadpoles, or eggs) found in construction areas shall be relocated to secure sites approved by SCWA. Only approved biologists shall participate in activities associated with the capture, handling, and monitoring of California red-legged frogs. 3. Prior to commencement of construction activities, the approved biologist(s) shall conduct a training session for all construction personnel. At minimum, the training shall include: (1) a description of California red-legged frog habitat; (2) project-specific measures being implemented to conserve the red-legged frog; and (3) identification of the boundaries of permitted work areas. 4. A SCWA-approved biologist shall be present at the work site until all California red-legged frogs have been removed, instruction of workers has been conducted, and habitat disturbance has been completed. After that time, the contractor or permittee shall designate a person to monitor on-site compliance with all minimization measures. The monitor and the SCWA approved biologist shall have the authority to halt any action that might result in impacts in excess of anticipated levels. 5. During project activities, all trash that may attract predators shall be properly contained, removed from the work site and disposed of regularly. 6. All fueling and maintenance of vehicles and other equipment, and staging areas, shall be located at least 20 meters from the drainage. Prior to the onset of work, SCWA shall ensure that the Applicants have prepared a plan to allow for a prompt and effective response to any accidental spills into the drainage. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur. 7. Access routes, staging areas, temporary grading, and the extent of all construction-related activity shall be limited to the minimum necessary to complete the project. Routes and boundaries shall be clearly demarcated and located outside of the riparian corridor. 8. When water is present, work activities in riparian and aquatic habitat shall be completed between June 15 and October 15. If the Applicants can demonstrate a need to conduct activities outside this time period, SCWA may authorize such activities after consulting with USFWS, CDFW, and NMFS.

9. The Applicants shall implement BMPs, as identified in the project's Stormwater Pollution Prevention Plan, to control erosion during and after project construction.
10. If pumping will be used to dewater the project site, intakes shall be completely screened with wire mesh no larger than five millimeters in size to prevent red-legged frogs from entering the pump.
11. Prior to dewatering, a qualified biologist shall capture and relocate any native fish or other vertebrate species found at the project site. Captured animals shall be relocated to a suitable pool or other location in the same water body above or below the project site.
12. An approved biologist shall permanently remove, from within the project site, any exotic wildlife species, such as bullfrogs and crayfish, to the extent possible.
13. After construction activities are finalized, the stream channel shall be restored to preconstruction conditions.

Swainson's hawk	
SH1	The Proposed Project construction would generate temporary increased ambient noise levels at the spillway from the use of excavator, bulldozer, water truck, and dump trucks. Increased traffic would also generate temporary increased ambient noise levels along the access route and staging area. Noise related impacts are considered less than significant because the Proposed Project is located within zoned agriculture land, the closest house is at a distance of approximately 1.2 kilometers (km) [0.75 miles (mi)], and construction is short-term (approximately two weeks), and no new construction or development is occurring that would result in a permanent increase in noise. As a result, there would be a less than significant impact.
SH2	New Construction Nest Buffers. Applicants shall not initiate new construction (e.g., land grading, seismic testing, equipment traffic, vegetation clearing) associated with urban development and other Covered Activities within 0.25 mile of an active Swainson's hawk nest. An active nest is defined as a site (i.e., tree) at which nest building/refurbishment, egg-laying, incubation, or feeding of young is occurring. (Note: this definition differs from that of active nesting territories for establishing mitigation requirements for impacts to known nest sites). Nesting shall be considered complete once the young have fledged and are capable of flight or the adults have abandoned the nest for a minimum of seven days. The typical nesting period for Swainson's hawks is between March 15 and August 31 and is typically when this restriction will apply. Nest trees may be removed between September 1 and February 1, when nests are unoccupied.
SH3	Occupied Nest Avoidance. If Swainson's hawk occupy a nest during ongoing construction activities, construction activities shall not occur within 500 feet of the nest, except where monitoring consistent with the criteria in Avoidance and Minimization Measure SH 1 documents that adverse effects will not occur.
SH4	Active Nest Tree Avoidance. Known active and historic (i.e., occupied within last ten years) Swainson's hawk nest trees within the Plan Area shall be avoided to the maximum extent practicable. Applicants proposing to remove trees shall provide written justification for tree removal to the appropriate Plan Participant. Sufficient rationales for tree removal include, but are not limited to, declining or poor suitability for nesting and public safety. Where the Applicants wish to remove an otherwise healthy tree to accommodate the project design, the justification letter shall clearly state why avoidance of the tree is not feasible.
Burrowing owl	
BO1	Preconstruction Surveys. To avoid "take" of an active nest burrow or individual owl due to construction activities, a qualified burrowing owl biologist shall conduct pre-construction surveys no more than 30 days prior to scheduled work within known or suitable habitat areas. Surveys shall include at least one burrow survey (to assess a site's potential to support owls). If suitable burrows are present, an additional observation survey shall be conducted from one hour before to two hours after sunrise and/or two hours before to one hour after sunset. Surveys shall be conducted without regard to season, as the region provides both potential breeding and wintering habitat for burrowing owls. Pre-construction surveys shall be conducted for each phase of development. If ground-disturbing activities are delayed or suspended for more than 30 days following the pre-construction survey, a qualified biologist shall re-survey the site and shall conduct a second follow up survey at minimum five days before start of construction. SCWA shall provide a list of biologists qualified to conduct burrowing owl pre-construction surveys in compliance with this conservation measure.

BO2	Exclusion. If burrowing owls are identified onsite during the initial pre-construction surveys (or during early biological site assessments), applicants are encouraged to allow vegetation to grow over the entire project site (except for required fuel breaks) to a height of 36 inches or more above the ground. The increased vegetation height, if in place by the beginning of the nesting season (e.g., retention of previous year's growth or planting during the previous winter), will discourage burrowing owl use of the site.
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<p>BO3</p>	<p>Construction Buffers and Passive Relocation. If Avoidance and Minimization Measure BO 2 cannot be implemented or is not effective, the following measures shall be implemented for new construction activities:</p> <p>(1) During the non-breeding season (September 1–January 31), a circular exclusion zone with a radius of 160 feet (50 meters) shall be established around occupied burrows. If a buffer cannot be established (except as provided below), burrowing owls shall be evicted from the entire construction area using passive relocation techniques. One-way doors shall be installed in all suitable burrows, left in place for a minimum of 48 hours, and monitored daily to evaluate owl exclusion and to ensure doors are functioning properly. Burrows shall then be excavated, using hand tools whenever possible, and re-filled to prevent reoccupation. Sections of flexible plastic pipe shall be inserted into burrows during excavation to maintain an escape route for any animals inside the burrow.</p> <p>(2) During the breeding season (February 1–August 31), a qualified burrowing owl biologist shall establish a circular exclusion zone with a radius of 250 feet (75 meters) around each occupied burrow. No construction-related activity (e.g., site grading, staking, surveying) shall occur within the exclusion zone until the burrows are confirmed to be unoccupied and/or juveniles are foraging and capable of independent survival. Only biologists familiar with burrowing owl behavior shall be permitted to determine whether juveniles are capable of independent survival. Once the burrows are unoccupied or the young are capable of independent survival, passive relocation techniques (as described above) shall be implemented to evict the owls from the burrows before construction can occur within the exclusion zone. Burrows shall be excavated, using hand tools whenever possible, and re-filled to prevent reoccupation before construction can occur within the exclusion zone. Sections of flexible plastic pipe shall be inserted into burrows during excavation to maintain an escape route for any animals inside the burrow.</p> <p>Construction buffers may be reduced under the following conditions:</p> <ol style="list-style-type: none"> 1. A site-specific analysis prepared by a qualified burrowing owl biologist indicates that the nesting pair(s) or wintering owl(s) would not be adversely affected by construction activities. SCWA, in consultation with the Resource Agencies, must approved this analysis in writing before construction can proceed; 2. Monitoring is conducted for a sufficient time (minimum of three consecutive days following the initiation of construction) and the nesting pair does not exhibit significant adverse reaction to construction activities (e.g., changes in behavioral patterns, reactions to noise) and the burrows are not in danger of collapse due to equipment traffic; 3. Monitoring is continued at least once a week through the nesting/wintering cycle at that site; and 4. Monitoring reports are submitted to SCWA. <p>If adverse effects are identified, construction activities shall cease immediately and construction shall not resume until CDFW is consulted to determine if construction may continue under modified restrictions or shall be suspended until nesting activity is complete.</p>
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<p>Tricolored blackbird</p>	
<p>RSM 8</p>	<p>The following measures shall be implemented in and within 250 feet of suitable tricolored blackbird breeding habitat:</p> <ol style="list-style-type: none"> 1. During the breeding season (February 1–August 31), a qualified biologist shall conduct pre-construction surveys within known or suitable nesting habitat areas no more than 30 days prior to scheduled work. Suitable nesting habitat includes dense vegetation near open water, in emergent wetland vegetation, especially cattails and tules, or in thickets of willow, blackberry, wild rose, tall herbs, and willow thickets and in silage and other grain fields such as sorghum. Pre-construction surveys shall be conducted for each phase of development. If ground-disturbing activities are delayed or suspended for more than 30 days following completion of the preconstruction survey, a qualified biologist shall re-survey the site and shall conduct a second follow up survey at least five days prior to the start of construction activities. 2. A minimum 250-foot buffer shall be established between work activities and any active nests. Construction buffers may be reduced under the following conditions: <ol style="list-style-type: none"> a. A site-specific analysis prepared by a qualified biologist indicates that construction activities would not adversely affect nesting birds. SCWA, in consultation with the Resource Agencies, must approve the analysis in writing before construction can proceed; b. Nesting birds do not exhibit significant adverse reaction to construction activities (e.g., changes in behavioral patterns, reactions to noise) based on sufficient monitoring (minimum of three consecutive days following construction initiation); c. Monitoring is continued at least once a week through the nesting cycle; and d. Monitoring reports are submitted to SCWA. 3. If adverse effects are identified, construction activities shall cease immediately and construction shall not resume until CDFW is consulted to determine if construction may continue under modified restrictions or shall be suspended until nesting activity is complete.

2.7 Agriculture and Forestry Resources

7. AGRICULTURE AND FOREST RESOURCES: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
(b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X	
(c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
(d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
(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?				X

2.7.1 Environmental setting

According to the Solano County General Plan (DRM 2008), land use in the county consists primarily of agriculture (56.5%), marsh (11.1%), water (8.8%), watershed

(6.3%), and residential (1.2%). The Plan designates the Proposed Project Area as Exclusive Agriculture, historically an important industry for the county, which provides for the practice of agriculture as the primary use (e.g., dryland farming, grazing, and agriculture-related housing). The Farmland Mapping and Monitoring Program, administered by California Department of Conservation, Division of Land Resource Protection, identifies the following Important Farmland types based on irrigation and soil characteristics: Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. The Proposed Project Area is not located within any of these Important Farmland types, but within an area designated as Grazing Land (DRM 2008). Grazing land is defined as land in which the existing vegetation is suited to the grazing of livestock (California Department of Conservation Farmland Mapping and Monitoring Program: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx>).

2.7.2 Findings

- (a) ***Would the project 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?***

The Proposed Project is not located within Prime Farmland, Unique Farmland, or areas of Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. The Proposed Project is located on Grazing Land. Further, the Proposed Project does not include any farmland conversion. There would be no impact.

- (b) ***Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?***

The subject property and adjacent lands are protected by the Williamson Act (DRM 2008); the Proposed Project area is zoned as Exclusive Agricultural. All construction would occur in a relatively small area (1.6 ac [0.6 ha]) and would be temporary and not conflict with existing zoning; therefore, temporary loss of agricultural land as a result of the Proposed Project is considered less than significant (DRM 2008). The Construction Footprint would be restored to pre-construction conditions to the extent possible. The potential impacts would be less than significant.

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

The Proposed Project is zoned as Exclusive Agricultural, and therefore would not conflict with existing zoning for forest lands or timber land. There would be no impact.

(d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The Proposed Project does not involve changes which could result in conversion of forested land to non-forest use. There would be no impact.

(e) Would the project 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?

Compared with existing conditions, reducing the surface area and capacity of Lynch Reservoir would result in a small increase in the area adjacent to the reservoir perimeter and correspondingly the cattle grazing area. As stated in 5(b) above, temporary construction impacts would occur in the relatively small area of the Construction Footprint and the Proposed Project would not result in a conversion of farmland to non-agriculture use. No impact would occur.

2.8 Noise

8. NOISE: Would the project result in:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
(b) Generation of excessive groundborne vibration or groundborne noise levels?			X	

2.8.1 Environmental setting

The Proposed Project is located within an agricultural, open space area. The Solano County General Plan (DRM 2008) identifies that a bulldozer at 50 ft would result in 90 dBA (decibel using the A weighting filter) and within agriculture land, 75+ dBA is normally unacceptable. The plan indicates, "If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded."

2.8.2 Findings

- (a) ***Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?***

Construction activities associated with the Proposed Project would generate temporary increased noise levels at the spillway from the use of excavator, bulldozer, water truck, and dump trucks. Construction activities would likely generate noise levels in excess of 75 dBA, or the standard identified in the Solano County General Plan for new construction or development. A small bulldozer produces 84 dBA, a backhoe/loader 79 dBA at 50 ft, and a dump truck 98 dBA at 50 feet (USFWS 2006). The elevated noise levels would occur for a short duration (i.e., approximately two weeks) in the immediate vicinity of the dam. Lynch Canyon Open Space is currently only open to the public on weekends and thus the Proposed Project would not have a substantial effect on visitors or recreationists. Also, the Proposed Project is located within zoned agriculture land and the closest house is at a distance of approximately 1.2 kilometers (km) [0.75 miles (mi)] north of the Proposed Project. These impacts would be less than significant.

- (b) ***Would the project result in a generation of excessive groundborne vibration or groundborne noise levels?***

The Proposed Project construction would generate temporary increased ambient groundborne vibration at the spillway from the use of excavator, bulldozer, water truck, and dump trucks. Groundborne vibration impacts would be less than significant because the Proposed Project is located within zoned agriculture land and the closest house is at a distance of approximately 1.2 kilometers (km) [0.75 miles (mi)] north of the Proposed Project. These impacts would be less than significant.

2.9 Land Use and Planning

9. LAND USE AND PLANNING: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Physically divide an established community?				X
(b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

2.9.1 Environmental setting

As previously stated, and use in Solano County consists primarily of agriculture (56.5%), marsh (11.1%), water (8.8%), watershed (6.3%), and residential (1.2%) (DRM 2008). The Solano County General Plan (2008) provides the following land use goals and policies:

- LU(Land use).G(goal)-1: Preserve and protect the current development pattern of distinct and identifiable cities and communities.
- LU.G-2: Encourage a development pattern that first seeks to maintain existing communities, second to develop vacant lands within existing communities presently served by public services, and third to develop lands immediately adjacent to existing communities where services can easily be provided.
- LU.G-3: Create sustainable communities with areas for employment, shopping, housing, public facilities and services, and recreation in close proximity to each other.
- LU.G-4: Encourage land use development patterns and circulation and transportation systems that promote health and wellness and minimize adverse effects on agriculture and natural resources, energy consumption, and air quality.

The Proposed Project is located within a Resource Conservation Overlay which identifies and protects areas of the county with special resource management needs while maintaining the land use designation (specifically agriculture). Resource Conservation Overlay protection, through resource studies or mitigation, may occur if the proposed project results in development.

The Proposed Project is located within the Tri-City/Country Cooperative Planning Area. The purpose of the Tri-City/Country Cooperative Planning is to utilize methods, subject to the specific property, to preserve land as permanent open space and includes objectives such as (1) securing permanent space, (2) preserving agricultural and compatible open space, (3) developing wind energy, (4) extracting mineral resources, (5) preserving open space resources and conservation, and (6) providing present and future recreation needs. The Proposed Project is located within the Lynch Canyon Open Space Property identified as a Regional Recreational Opportunity Areas which includes, but is not limited to, family/small group and medium group picnic areas, hiking, mountain biking, and horse riding; no camping is allowed on the property. The Proposed Project would not conflict with the planning objectives as no long-term impacts to recreation would occur and there would be no development of open space.

Finally, the Proposed Project is not located within a designated Special Study Area (i.e., Middle Green Valley, Suisun Valley, Collinsville, Old Town Cordelia), as identified in the Solano County General Plan (2008).

2.9.2 Findings

(a) Would the project physically divide an established community?

The Proposed Project would not result in physical barriers that would divide an established community. The Proposed Project is located in an area that currently bisects the Applicants property; however, the Proposed Project would not result in any further division between the properties. There would be no impact.

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

The proposed project is consistent with the Solano County General Plan. The Proposed Project would not conflict with objectives identified in the Tri-City/Country Cooperative Planning Area or by the Resource Conservation Overlay. No additional studies or mitigation would be required under the Resource Conservation Overlay because this Proposed Project does not include development. With inclusion of the terms listed above, specifically the requirement in Section 2.5 *Hydrology and Water Quality* that the Applicant be in compliance with all necessary permits and other approvals required by other agencies, the impacts would be less than significant.

2.10 Mineral Resources

10. MINERAL RESOURCES. Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?				X
(b) Result in the loss of availability of a locally-imported mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				X

2.10.1 Environmental setting

Mineral resources in Solano County include mercury, sand and gravel, clay, stone products, calcium, and sulfur (DRM 2008). The Proposed Project is not located within a designated mineral resource zone and is located approximately 2.4 km (1.5 mi) from a resource identified in the Solano County General Plan (DRM 2008) as Mineral Resource Zone 3, which occur throughout the county and include an area that contains mineral deposits, the significance of which cannot be evaluated from available data.

Solano County has adopted two mineral resource policies: (1) preserve, for future use, areas with important mineral resources and (2) ensure that extraction operations are performed in a manner compatible with land use on the site and area and do not adversely affect the environment (DRM 2008).

2.10.2 Findings

- (a) ***Would the project result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?***

For the Proposed Project, the volume of excavation is relatively small, estimated to be approximately 765 m³ (1,000 yd³), and would have no direct or indirect effect on known mineral resources or any delineated mineral resource recovery sites. There would be no impact.

- (b) ***Would the project result in the loss of availability of a locally-imported mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?***

The volume of excavation is relatively small, estimated to be approximately 765 m³ (1,000 yd³), and would have no direct or indirect effect on known mineral resources or any delineated mineral resource recovery sites. There would be no impact.

2.11 Hazard and Hazardous Materials

11. HAZARDS AND HAZARDOUS MATERIALS: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		X		
(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?		X		
(c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
(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?				X
(e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
(f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
(g) Expose people or structures, either directly or indirectly, 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?		X		

2.11.1 Environmental setting

The Proposed Project is located within an agricultural area and includes the existing Lynch Canyon Reservoir and an unnamed stream that is locally known as the North Fork of Lynch Canyon Creek. There are no known contamination hazards in the Proposed Project Area that result in degraded air or water quality that result in health effects.

Lowering the spillway crest 2 to 3 feet would remove the dam from the DSOD jurisdiction. DSOD has no substantial comments on the aforementioned Proposed Project description and engineering plans for the Lynch Canyon Dam spillway modifications (R. Bowlus, DSOD, pers. comm., June 18, 2012).

2.11.2 Findings

(a) (b) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials and would the project 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?

The Proposed Project would involve the short-term use and routine transport of oils, fuels, lubricants, and other potentially hazardous substances that are typically associated with construction activities. Accidental release of these substances into the environment during use of construction-related heavy equipment would be a significant impact. Implementation of Mitigation Measure WQ-2 *Construction Pollution Control* would minimize the potential for accidental spills and any associated environmental impacts and would reduce this potential impact to a less than significant level.

(c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No schools are located within 0.40 km (0.25 mi) of the Proposed Project. The closest school is Green Valley Middle School which is located approximately 5 km (3 mi) from the Proposed Project Area. There would be no impact.

(d) Would the project 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?

The Proposed Project is not located on a hazardous material site (DTSC 2012); therefore, the Proposed Project would have no impact.

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

The Proposed Project is not located within an airport land use plan, where such a plan has not been adopted, or within two miles of a public airport or public use airport. The Proposed Project would not result in a safety hazard or excessive noise for people residing or working in the Proposed Project Area. There would be no impact.

- (f) ***Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?***

The Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The Proposed Project is located along a dirt road in an agricultural area primarily used for year-round livestock grazing, with additional use by recreating pedestrians, cyclists, and horseback riders. The Lynch Canyon Open Space is currently only open to the public on weekends. There would be no impact.

- (g) ***Would the project expose people or structures, either directly or indirectly, 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?***

The Proposed Project is located in a rural area that contains substantial fuels (e.g., grasses) that are susceptible to wildland fire. CalFire has designated the area in which the Proposed Project is located as a high risk fire hazard zone (CalFire 2019), with the nearest residence located approximately 0.75 miles north of Lynch Canyon Reservoir in rural Solano County, and the nearest group of residences located approximately 3.1 miles away in the Cordelia Housing Development (Figure 6). The risk of wildland fire associated with the Proposed Project is similar to that of other construction projects occurring during the late summer/early fall, whereby heavy equipment, working in an area of dry grasses during September and October when conditions are hot and dry, could accidentally ignite a wildfire that could rapidly spread to nearby residences. This would be a significant impact. Including Mitigation Measure HZ-1, substantially as written, in any permit issued pursuant to water right application 30949, would reduce this potential impact to a less than significant level.

Mitigation Measure HZ-1 – Wildfire Control: Construction areas shall be cleared of combustible materials, spark arrestors on construction equipment shall be in good working order, and dry grasses and low-growing shrubs shall be mowed in the equipment staging area.

2.12 Wildfire

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

2.12.1 Environmental setting

The Proposed Project is located on lands identified as state responsibility. CalFire has designated the area in which the Proposed Project is located as a high-risk fire hazard zone (CalFire 2019)

2.12.2 Findings

(a) *Would the Proposed Project Impair an adopted emergency response plan or emergency evacuation plan?*

Construction associated with the Proposed Project would occur for a short duration (i.e., two weeks) and would not occur on high-traffic roads or in areas that would prevent emergency response or evacuation. There would be no short-term construction-related impact.

In the long-term, the Proposed Project would reduce reservoir water storage capacity from 79 af to 47 af. Reduction of the reservoir could affect emergency response if there was a need to refill trucks or helicopters transporting water from the reservoir for fire suppression in the adjacent agricultural, open space area.

Although there would be less water in the reservoir, water would remain for local wildfire suppression, with the exception of short periods when the reservoir would be drained to manage the invasive bullfrog (see Section 2.6.5 (a)). The most proximal residential communities are located adjacent to water sources—the communities of American Canyon and Vallejo are adjacent to San Pablo Bay, and Cordelia is adjacent Cordelia Slough—such that the water in the relatively small Lynch Canyon Reservoir would not be critical to fire suppression for these communities. Thus, the long-term impact would be less than significant.

(b) *Would the Proposed Project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

While decreasing the reservoir capacity would expose more upland habitat, which could increase the area of vegetation that is subject to wildfire, the Proposed Project would not fundamentally increase the risk of wildfire occurrence relative to existing conditions. It also would not increase the risk that the public using the area for weekend activities during April through October, such as hiking and wildlife viewing, would be exposed to pollutant concentrations from a wildfire. There would be no impact.

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

The Proposed Project does not include the development, or maintenance of, roads, fuel breaks, power lines or other utilities. While the Proposed Project would not install an emergency water source, it would reduce the capacity of an existing water source (i.e., Lynch Canyon Reservoir), which could affect fire risk by reducing the amount of available water in the reservoir to refill trucks or helicopters for fire suppression in the adjacent agricultural, open space area. Although there would be less water in the reservoir, water would remain for local wildfire suppression, with the exception of short periods when the reservoir would be drained to manage the invasive bullfrog (see Section 2.6.5 (a)). Other small reservoirs or ponds are located in the vicinity of the Proposed Project (i.e., approximately 1.5 miles to the northwest [Figure 1] and 2.5 miles northeast). Larger bodies of water including San Pablo Bay and Cordelia Slough are located approximately five and four miles from the Proposed Project, respectively, which provide much larger sources of water for fire suppression. Overall, there would be a less than significant impact.

(d) *Would the Proposed Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

The Proposed Project would not increase slope instability or the potential for an increased risk of downslope or downstream flooding or landslides related to wildfires or otherwise (see also Section 2.1.2 (a) (iv)). There would be no impact.

2.13 Population and Housing

13. POPULATION AND HOUSING: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No Impact
(a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
(b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

2.13.1 Environmental setting

The Proposed Project is located within zoned agriculture land and the closest house is at a distance of approximately 1.2 km (0.75 mi) north of the Proposed Project in a rural area of Solano County. The City of Vallejo is located approximately 5 km (3 mi) to the west of the Proposed Project and the City of Fairfield is located approximately 20 km (13 mi) to the east.

2.13.2 Findings

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

The Proposed Project is in an agricultural area zoned for grazing. It would not provide drinking water or in any other way directly or indirectly induce substantial growth in the Proposed Project Area, nor would the Proposed Project displace people or housing. There would be no impact.

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

No displacement of residents would occur because the Proposed Project is located within zoned agricultural land and the closest house is located approximately 1.2 km (0.75 mi) north of the Proposed Project. There would be no impact.

2.14 Transportation

14. TRANSPORTATION: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Conflict with a plan, ordinance or policy addressing the performance of the circulation system, including transit, roadways, bicycle lanes and pedestrian paths?				X
(b) For a land use project, would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)?			X	
(c) For a transportation project, would the project conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(2)?				X
(d) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
(e) Result in inadequate emergency access?				X

2.14.1 Environmental setting

Vehicular access in the vicinity of the Proposed Project is provided by Lynch Canyon Road, a one-lane dirt road close to Interstate 80, located between American Canyon Road and Highway 12 (Jameson Canyon Road). All Proposed Project activities (e.g., equipment staging, soils spreading, rock stockpile) would occur from Lynch Canyon Road.

2.14.2 Findings

(a) *Would the project conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian paths?*

The Proposed Project is not anticipated to significantly increase local or regional traffic on paved roads in the vicinity of Lynch Canyon Open Space. A small

number of construction vehicles would be required within the Construction Footprint during the approximately two-week construction period. The Proposed Project would not conflict with any plans, ordinances, or policies addressing the regional circulation system. There would be no impact.

(b) For a land use project, would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)?

As identified in CEQA Guidelines section 15064.3, subdivision (b)(1), projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. The Proposed Project is located approximately 0.9 miles north of Interstate 80. However, construction associated with the Proposed Project is not anticipated to significantly increase traffic given the small scale of the Proposed Project. A small number of construction vehicles would be required within the Construction Footprint during the approximately two-week spillway lowering period. The Proposed Project would not modify flow of traffic to Interstate 80, including emergency vehicles, other than daily access of construction personnel to the Proposed Project. Impacts would be less than significant.

(c) For a transportation project, would the project conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(2)?

The Proposed Project is not a transportation project. There would be no impact.

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

Access for construction vehicles on Lynch Canyon Road, a one-lane dirt road off Interstate 80, may result in incompatible use for other maintenance vehicles requiring access to, or upstream of, the spillway location. The Applicants will notify companies accessing nearby Red Top Cell Tower sites of temporary road delays. The Lynch Canyon Open Space property is currently only open to the public on weekends. The Proposed Project would not result in any long-term modification to ground transportation or traffic. Impacts would be less than significant.

(e) Would the project result in inadequate emergency access?

The Proposed Project would not modify flow of traffic to Interstate 80, including emergency vehicles, other than daily access of construction personnel to the Proposed Project. There would be no impact.

2.15 Public Services

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

2.15.1 Environmental setting

Fire protection services in Solano County are provided by the California Department of Forestry and Fire Protection which includes the six following fire districts: Cordelia Fire Protection District (FPD), the Dixon FPD, the East Vallejo FPD, the Montezuma FPD, the Suisun FPD, and the Vacaville FPD. Emergency medical services are provided by the Solano Emergency Medical Services Cooperative and the majority of law enforcement is administered by the Solano County Office of the Sheriff (DRM 2008).

Solano County supports seven school districts of which each support at least one elementary, middle, and high school. Elementary school education is provided by Head Start, State Preschool, and other public and private for profit and nonprofit groups overseen by the First 5 Solano Children and Families Commission and the Solano County Office of Education. The Solano Community College provides post-high school education and is located in an unincorporated county area (DRM 2008). A number of schools are located within approximately 8 km (5 mi) (e.g., Elsa Widenmann Elementary School, Everest School, Johnston Cooper Elementary School, Dan Mini Elementary School Green Valley Middle School, Solano Junior High School, and Peoples High School).

The state Department of Parks and Recreation operates the Benicia State Recreation Area and the Benicia Capitol State Historic Park and CDFW provides hunting, fishing, and nature study opportunities along Putah Creek and in the Napa and Suisun marshes

(DRM 2008). Regional recreation planning is provided by the Association of Bay Area Governments and the Bay Conservation and Development Commission preserves and protects San Francisco Bay and the shoreline (DRM 2008).

2.15.2 Findings

- (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.***

The Proposed Project would not alter the use of the site for agricultural purposes and recreation on private lands, and therefore would not generate additional demand for government facilities or services. There would be no impact.

2.16 Utilities and Service Systems

16. UTILITIES AND SERVICE SYSTEMS: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				X
(b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
(c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
(d) Generate solid waste in excess of State or local standards in excess of the capacity of local infrastructure			X	
(e) Negatively impact the provision of solid waste services or impair the attainment of solid waste reduction goal?			X	
(f) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X

2.16.1 Environmental setting

Livestock water is supplemented by an on-site well, and wastewater is collected from a single public pit toilet and pumped periodically in the visitor parking area. Storm water in the Lynch Canyon Open Space is controlled primarily by natural watercourses, creeks and streams, with some small road culverts along the South Fork and North Fork of Lynch Canyon Creek, as well as the larger culvert at I-80 along Lynch Canyon Creek (Figure 1).

2.16.2 Findings

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

The Proposed Project would not require any changes to local utility systems. The Proposed Project does not require connection to a Community Services District sewer and/or water line. In addition, the Proposed Project does not include development that has the potential to increase the need for additional water and sewer services, power, natural gas, or telecommunication facilities. There would be no impact.

- (b) ***Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?***

The Proposed Project does not include development that has the potential to increase the need for additional water and sewer services, or storm water drainage facilities. There would be no impact.

- (c) ***Would the project 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?***

The Proposed Project would not affect water and/or sewer services in the area. There would be no impact.

- (d) ***Would the project generate solid waste in excess of State or local standards in excess of the capacity of local infrastructure?***

A small amount of trash may be generated from a few construction personnel on site. Hazardous waste from construction activities (e.g., batteries) would be disposed of in accordance with applicable state and federal laws at an approved disposal site while non-hazardous solid waste (e.g., garbage, paper, aluminum cans) can be delivered to existing landfills. Hay Road Landfill will not reach its capacity until 2070. Potrero Hills Landfill is anticipated to reach its capacity in 2013, but may be expanded to reach its long-term capacity in 2049 (DRM 2008). Impacts would be less than significant.

- (e) ***Would the project negatively impact the provision of solid waste services or impair the attainment of solid waste reduction goal?***

As described in 2.14 (d) above, a small amount of trash may be generated from a few construction personnel on site and no solid waste services would be

negatively impacted nor would solid waste reduction goals be impaired. Impacts would be less than significant.

(f) *Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

As stated in the local Solano County General Plan (DRM 2008), any hazardous waste from construction activities (e.g., batteries) would be disposed of in accordance with applicable state and federal laws at an approved disposal site. Non-hazardous solid waste (e.g., garbage, paper, aluminum cans) can be delivered to existing landfills. There would be no impact.

2.17 Aesthetics

17. AESTHETICS: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Have a substantial adverse effect on a scenic vista?			X	
(b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
(c) Substantially degrade the existing visual character or quality of public views of the site and its surroundings? Is the project in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
(d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

2.17.1 Environmental setting

The Proposed Project is located within an agricultural, open space area that is managed by a land trust. The open space area includes steep grasslands, riparian corridors, and the existing man-made Lynch Canyon Reservoir. Section 2.20 *Recreation* lists recreation resources, including wildlife viewing and other forms of recreation

2.17.2 Findings

(a) *Would the project have a substantial adverse effect on a scenic vista?*

The Proposed Project is not located near a public scenic viewpoint, nor a state designated or eligible scenic highways (CDOT 2012). Lowering the reservoir spillway elevation from 5.7 m (18.8 ft) to 4.8 m (15.8 ft) would reduce the surface area of the Lynch Canyon Reservoir from 5.1 ha to 3.0 ha (12.6 ac to 7.5 ac). These permanent reductions in reservoir area are not anticipated to result in a significant impact to the overall aesthetic or vista in the area. Construction-related visual impacts would result from the presence of equipment (i.e., track excavator, small bulldozer, backhoe/loader, one or two 10-yard dump trucks, and water truck) and work crews. However, these visual impacts would be temporary and most noticeable to visitors and recreationists to the Lynch Canyon Open Space property. Therefore, the impact is considered less than significant.

(b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The Proposed Project would not result in removal of trees or natural rock outcroppings. As a result, there would be no impact.

(c) Would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? Is the project in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The Proposed Project is in a rural area and not within an urbanized area. See 15(a) above. The impact is less than significant.

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

The Proposed Project seasonal diversion and storage of up to 47 af in an existing on-stream reservoir would not affect lighting on the Lynch Canyon Open Space property. Construction activities related to spillway lowering would occur during daylight hours and the need for nighttime lighting is not anticipated. Once the construction associated with the Proposed Project has been completed, no long-term effects would occur. There would be no impact.

2.18 Cultural Resources

18. CULTURAL RESOURCES: Would the project:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?				X
(b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		
(c) Disturb any human remains, including those interred outside of formal cemeteries?		X		
(d) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X

2.18.1 Environmental setting

The Cultural Resource Facility of Sonoma State University conducted a cultural resources study in the Lynch Canyon watershed area (which partially overlaps with the Proposed Project Area) in 1983 (York et al. 1983). The study included a pre-field review of the pertinent archaeological, ethnographic, and historic literature (including site records, survey reports, and base maps) and an intensive survey of the property. In areas where soil visibility was obscured by ground cover, small areas were cleared to allow for examination of the soil. No excavations were performed during this survey though trowels were used to expose some areas where sites were discovered.

An additional cultural resources study was conducted by Jason A. Coleman of Solano Archaeological Services in 2012 (Coleman 2012). This study included two survey areas that were not covered by the 1983 study, which included a portion of the Construction Footprint and the equipment staging area. The assessment also included a Northwest Information Center (NWIC) record search which in turn conducted a record search of the California Historical Resources Information System, National Register of Historic Places, California Historical Landmarks, California Points of Historical Interest, California Inventory of Historic Resources, and other pertinent historic, Plat, and soil maps.

In 1983, one historic site was discovered within the Lynch Canyon Open Space property boundary; however, it was not located within the Construction Footprint. The historic site contains evidence that it may have been occupied as early as 1901 or even as early as the 1870s or prior. This site may represent evidence of the everyday life of the subsistence farmers of the area who, as a group, are poorly represented in the historical record. This investigation was limited to a surface inspection so it is possible that archaeological remains are present below the surface. The 2012 assessment did not identify any cultural resources (Coleman 2012).

2.18.2 Findings

(a) *Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

Four prehistoric sites and one historic site are located within the Lynch Canyon Open Space property boundary; however, the historical sites are not located within the Construction Footprint, and thus the Proposed Project would not cause a substantial adverse change in the significance of these resources. There would be no impact.

(b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

There is a possibility that buried archaeological deposits could be present and accidental discovery could occur during project construction. Including Mitigation

Measure CR-1, substantially as written, in any permit issued pursuant to water rights application 30949, would reduce potential impacts on archaeological resources to a less than significant level.

- **Mitigation Measure CR-1 – Notification and Consultation with Professional Archeologist:** *Should any buried archeological materials be uncovered during project activities, such activities shall cease within 100 ft of the find. Prehistoric archeological indicators include: obsidian and chert flakes and chipped stone tools; bedrock outcrops and boulders with mortar cups; ground stone implements (grinding slabs, mortars and pestles) and locally darkened midden soils containing some of the previously listed items plus fragments of bone and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic and metal objects; milled and split lumber; and structure and feature remains such as building foundations, privy pits, wells and dumps; and old trails. The Deputy Director for Water Rights shall be notified of the discovery and a professional archeologist shall be retained by the right holder to evaluate the find and recommend appropriate mitigation measures. Proposed mitigation measures shall be submitted to the Deputy Director for Water Rights for approval. Project-related activities shall not resume within 100 ft of the find until all approved mitigation measures have been completed to the satisfaction of the Deputy Director for Water Rights.*

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

Given the archaeological evidence, no formal cemeteries are likely to be present in the Proposed Project Area. Since Native Americans occupied the area in the past, there is a possibility that human remains could be present. Including the Mitigation Measure CR-2, substantially as written, in any permit issued pursuant to water right application 30949, would reduce potential impacts to a less than significant level.

- **Mitigation Measure CR-2 – Consultation with County Coroner and Native American Heritage Commission:** *If human remains are encountered during project construction, then the right holder shall comply with Section 15064.5 (e) (1) of the California Environmental Quality Act Guidelines and the Health and Safety Code Section 7050.5. All project-related ground disturbances within 100 ft of the find shall be halted until the county coroner has been notified. If the coroner determines that the remains are Native American, the coroner will notify the Native American Heritage Commission to identify the most-likely descendants of the deceased Native Americans. Project-related ground disturbance in the vicinity of the find shall not resume until the process detailed under Section 15064.5 (e) has been completed and evidence of completion has been submitted to the Deputy Director for Water Rights. If remains of Native Americans are encountered, a tribal monitor shall be present during further ground disturbing activities.*

(d) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Based on the geology in the area, there is a potential for micro-fossils (nanoplankton and foraminifera) that are common to the mudstone at the site to be present; however, the Proposed Project is not anticipated to directly or indirectly destroy a unique paleontological resource site or unique geologic feature. The Proposed Project involves reconfiguring a spillway, and does not include deep trenching or other ground disturbance with the potential to significantly disrupt underlying formations. Therefore, there will be no impact on paleontological resources or on unique geologic features.

2.19 Tribal Cultural Resources

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

2.19.1 Environmental setting

At the time of contact, the Lynch Canyon area was within the territory of the Patwin (Kroeber 1925, as cited in York 1983). The Patwin were further divided into the Hill Patwin, settling into the western foothills of the Coastal Range, and River Patwin which settled along the Sacramento River and valley creek drainages (Coleman 2012).

Cultural resource studies, addressing tribal cultural communication and/or evaluations, were conducted in 1983 and 2012. In 1983, the Cultural Resource Facility of Sonoma State University conducted a cultural resources study in the Lynch Canyon watershed area (which partially overlaps with the Proposed Project Area) (York et al. 1983), including a discussion with a member of the Suscol Indian Council and a site visit to conduct an intensive survey of the property, as described above in Cultural Resources (Section 2.18). In 2012, a cultural resources study was conducted by Jason A. Coleman of Solano Archaeological Services (Coleman 2012). This second cultural resources study included two survey areas that were not covered by the 1983 study, which included a portion of the Construction Footprint and the equipment staging area. The evaluation included an assessment as described above in Cultural Resources (Section 2.18), and also included the following: (1) consultation with the Native American Heritage Commission to conduct a record search of the Sacred Land file and (2) contact local Native American groups (Cortina Band of Indians, Wintun Environmental Protection Agencies, and Yocha Dehe Wintun Nation), to provide information about the project and encourage questions or comments.

During the 1983 field survey, four tribal cultural resource sites were discovered within the Lynch Canyon Open Space property boundary—one of the sites is located within the northern portion of the Proposed Project Area and another is located within 61 m (200 ft) of the Proposed Project Area boundary (York et al. 1983). None of the sites are located within the Construction Footprint. Tribal cultural resource artifacts identified during the survey and presumed use are provided in the 1983 report. It was noted that these results have the potential to inform significant research questions about the people of the area (e.g., chronology, land use patterns, exchange systems, and ethnicity).

The 2012 cultural resource evaluation resulted in communication with Ms. Debbie Pilas-Treadway, Environmental Specialist III with Native American Heritage Commission (NAHC), stating that the “record search of the sacred land file had failed to indicate the presence of Native American cultural resources in the immediate project area” and no response from the local Native American groups. Also, both NAHC Sacred Land Search and the Northwest Information Center (NWIC) record search was negative for cultural resources in the Proposed Project Area.

2.19.2 Regulatory setting

Assembly Bill 52 (AB52) (Gatto 2014) in part amended the California Environmental Quality Act (CEQA) to:

1. Establish a new category of resources requiring analysis in CEQA called “tribal cultural resources” that is analyzed separately from paleontological resources;
2. Require the CEQA lead agency to begin consultation with a California Native American Tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe appropriately so requests;

As part of consultation the parties may propose mitigation measures, including but not limited to, those capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to tribal cultural resources. The consultation shall be considered concluded when either of the following occurs:

- a. The parties agree to measures to mitigate or avoid significant effects (if a significant effect exists) on a tribal cultural resource; or
- b. A party acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

As defined by the State of California (OPR 2015), a tribal cultural resource must be either: listed, or determined to be eligible for listing, on the national, state, or local register of historic resources, or (2) a resource that the lead agency chooses, in its discretion, to treat as a tribal cultural resource.

To meet the requirements of CEQA and AB52, California Native American Tribes with ancestral affiliation in the vicinity of the Proposed Project were contacted, as noted in Section 2.18 *Cultural Resources*. Information associated to identify and evaluate tribal cultural resources in the vicinity of the Proposed Project Area are provided in the discussion of environmental setting, potential impacts, and mitigation measures.

2.19.3 Findings

- (a) (i) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?***

As described above, there are no known tribal cultural resources within the Construction Footprint. Both NAHC Sacred Land Search and the NWIC record search was negative for cultural resources in the Proposed Project Area. There is a possibility that buried tribal cultural resource deposits (e.g., chert flakes,

chipped stone tools) could be present and accidental discovery could occur during project construction. Implementing mitigation measure CR-1 and CR-2, would reduce potential impacts on tribal cultural resources to a less than significant level.

(a) (ii) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

As described above, there are no known tribal cultural resources within the Construction Footprint. Both NAHC Sacred Land Search and the NWIC record search was negative for cultural resources in the Proposed Project Area. There is a possibility that buried tribal cultural resources could be present and accidental discovery could occur during project construction. Implementing mitigation measures CR-1 and CR-2, would reduce potential impacts on tribal cultural resources to a less than significant level.

2.20 Recreation

20. RECREATION:	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
(a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
(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?			X	

2.20.1 Environmental setting

Solano County has various types of parklands, including state parks, community parks, and neighborhood parks. Recreational opportunities include fishing, camping, swimming, picnicking, horseback riding, bicycling, hiking, and walking. The state Department of Parks and Recreation operates the Benicia State Recreation Area and the Benicia Capitol State Historic Park and CDFW provides hunting, fishing, and nature study opportunities along Putah Creek and in the Napa and Suisun marshes. Regional recreation planning is provided by the Association of Bay Area Governments and the Bay Conservation and Development Commission preserves and protects San Francisco Bay and its shoreline.

The Lynch Canyon Open Space property is owned and operated by Solano Land Trust and also contains several miles of trails for hiking, bicycling, and horseback riding, along with multiple small picnic areas. The Lynch Canyon Open Space is open to the public on Saturday and Sunday between April and October through an agreement with Solano County Parks. Although no in-water recreation (e.g., boating) is permitted in the reservoir, the reservoir provides habitat for wildlife species for recreational viewing (e.g., bird watching).

2.20.2 Findings

(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?*

The Proposed Project would not result in additional development; therefore, no additional use of nearby regional parks or recreational facilities would occur. There would be no impact.

(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?*

The Proposed Project does not include the construction or expansion of recreational facilities. Although the Proposed Project is located in a zoned agricultural area, pedestrians, cyclists, and horseback riders recreate in the area and the Proposed Project includes non-watersport recreation (i.e., bird watching). The Proposed Project would not substantially degrade the area. Due to their temporary and limited nature, construction related impacts to recreational use of Lynch Canyon Open Space would be less than significant.

2.21 Mandatory Findings of Significance

21. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially significant impact	Less than significant with mitigation	Less than significant impact	No impact
<p>(a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?</p>		X		
<p>(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)?</p>			X	
<p>(c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</p>			X	

2.21.1 Findings

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

The Proposed Project includes multiple actions: seasonal water diversion of up to 47 af from North Fork of Lynch Canyon Creek, water storage in an existing, unpermitted reservoir, water use, and lowering of the existing spillway crest and installing a siphon in an existing on-stream reservoir. Proposed water uses include stock watering, fish and wildlife preservation and enhancement, and non-watersport recreation bird watching. With the mitigation measures proposed and

accepted by the Applicant, the Proposed Project would have less-than-significant impacts on the environment. Please refer to the earlier sections in this Initial Study for the special water right mitigation measures that minimize potentially significant environmental impacts to less-than-significant levels.

(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)?

The greatest potential for significant cumulative effects is related to impacts on Central California Coast steelhead from seasonal diversion of approximately 47 af from the North Fork of Lynch Canyon Creek. As stated above in Section 2.5 *Hydrology and Water Quality* and Section 2.6 *Biological Resources*, CFII calculations during the supply season were 14.6% at the POD and 4.7% at the LOA. This indicates that the Proposed Project seasonal diversion would not dewater the stream reach upstream of the LOA during the supply season, as recommended for on-stream reservoirs (CDFG and NMFS 2002) and that there would not be a significant cumulative reduction in the unimpaired water supply at or downstream of the LOA during the supply season (CDFG and NMFS 2002). During the Proposed Project diversion season and outside of the 2002 Draft Guidelines recommended supply season, which includes October 1 to December 15 and March 31 to June 1, water use as proposed would not impact steelhead because (1) the reservoir would typically spill in October or November, and (2) the reservoir would be at 100% capacity through May and into June and any water entering upstream of the reservoir would continue downstream. As part of the Proposed Project, inflow outside of the Proposed Project diversion season to the POD must equal the outflow to downstream reaches past the POD. Based on the anticipated reservoir storage patterns and the primarily non-consumptive use of the reservoir, CDFW determined that a diversion season bypass flow would not substantially benefit downstream resources and thus would not be necessary (Stillwater Sciences 2013). Consequently, the Proposed Project would not make a cumulatively considerable incremental contribution to the significant cumulative impact on Central California Coast steelhead. No past, current, or probable future projects were identified in the Proposed Project Area, that when added to project-related impacts, would result in significant cumulative impacts on any other environmental resources.

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

The Proposed Project would bring the existing, unpermitted dam out of DSOD jurisdiction by reducing the volume held in the existing reservoir and therefore decrease the risk of loss, injury, or death resulting from any potential ground shaking, as compared with existing conditions. With the above mitigation

measures proposed and accepted by the Applicant, the Proposed Project would have a less than significant impact on the environment.

3 DETERMINATION

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	<input type="checkbox"/>
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A NEGATIVE DECLARATION will be prepared.	<input checked="" type="checkbox"/>
I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	<input type="checkbox"/>

Reviewed By:

Matthew McCarthy
 Coastal Lahontan Permitting Unit
 Division of Water Rights
 State Water Resources Control Board

Date Signed:

4 REFERENCES

AEP (Association of Environmental Professionals). 2014. California Environmental Quality Act (CEQA) Statute and Guidelines. 40747 Baranda Court Palm Desert, CA. Available at: www.califaep.org

Asbury, D. 2005. Historical status of *Oncorhynchus mykiss* in streams of Solano County, California (map). Center for Ecosystem Management and Restoration, Oakland, California.

Ashton, D. T., A. J. Lind, and K. E. Schlick. 1998. Foothill yellow-legged frog (*Rana boylei*) natural history. U.S. Forest Service, Pacific Southwest Research Station, Arcata, California.

BAAQMD (Bay Area Air Quality Management District). 2010. A guide to the Bay Area Air Quality Management District. http://www.baaqmd.gov/~media/Files/Communications%20and%20Outreach/Publications/Annual%20Report/BAAQMD_Guidebook_10_FINAL_lowerres.ashx?la=en

BAAQMD. 2017. California Environmental Quality Act Air Quality Guidelines. May 2017. Available at: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Bailey, E. D. 1954. Time pattern of 1953-54 migration of salmon and steelhead into the upper Sacramento River. California Department of Fish and Game.

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, and T. J. Rosatti, editors. 2012. The Jepson manual, vascular plants of California. Second edition. University of California Press, Berkeley, California.

Bechard, M. J. and J. K. Schmutz. 1995. Ferruginous hawk (*Buteo regalis*). The birds of North America Online. A. Poole, editor. Cornell Lab of Ornithology, Ithaca, New York. <http://bna.birds.cornell.edu/bna/species/172/articles/breeding>

Brown, C. R. 1997. Purple martin (*Progne subis*). The birds of North America Online. A. Poole, editor. Cornell Lab of Ornithology, Ithaca, New York. <http://bna.birds.cornell.edu/bna/species/287/articles/breeding>

Buehler, D. A. 2000. Bald eagle (*Haliaeetus leucocephalus*). The birds of North America online. A. Poole, editor. Cornell Lab of Ornithology, Ithaca, New York. <http://bna.birds.cornell.edu/bna/species/506> doi:10.2173/bna.506

CalFire. 2019. FHSZ viewer. Website. <https://egis.fire.ca.gov/FHSZ/> [Accessed July 2019]. Prepared by CalFire Fire and Resource Assessment Program, Sacramento, California

California Air Resources Board. 2016. Ambient air quality standards. California Environmental Protection Agency, Sacramento.
<http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>

California Department of Water Resources. 2012. Lynch Canyon Dam, No. 7000-90, Solano County. Letter from California Department of Water Resources, Sacramento, California to Solano Land Trust, Fairfield, California.

California Energy Commission. 2019. Building energy efficiency standards - Title 24. Website. <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards> [Accessed July 2019]. Prepared by California Energy Commission, Sacramento, California.

California Herps. 2013. *Rana draytonii* - California red-legged frog. Website.
<http://www.californiaherps.com/frogs/pages/r.draytonii.html>.

CDFG (California Department of Fish and Game). 2009. Protocols for surveying and evaluating impacts to special status native plant populations and natural communities. CDFG, Nongame Program, Sacramento.
http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf

CDFG. 2011. California Natural Diversity Database (CNDDB), RareFind, Version 3.1.1. CDFG, Natural Heritage Division, Sacramento, California.
<http://www.dfg.ca.gov/whdab/html/cnddb.html>

CDFG. 2012. Staff report on burrowing owl mitigation. Sacramento, California.
<http://www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf>

CDFG and NMFS (California Department of Fish and Wildlife and National Marine Fisheries Service). 2002. Guidelines for maintaining instream flows to protect fisheries resources downstream of water diversions in mid-California coastal streams (an update of the May 22, 2000 guidelines). Draft dated June 17, 2002 (errata note dated August 19, 2002). CDFG, Sacramento and NMFS, Southwest Region, Santa Rosa, California.
http://www.waterboards.ca.gov/waterrights/water_issues/programs/coastal_streams/docs/nmfs_dgs_fish_guidelines_061702.pdf

CDFW. 2018. California's invaders: American bullfrog. Website.
<https://www.wildlife.ca.gov/Conservation/Invasives/Species/Bullfrog> [Accessed November 2018]. Prepared by CDFW, Sacramento, California.

CDOT (California Department of Transportation). 2012. California Scenic Highway Mapping System. Interactive online map.
http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm

CGS (California Geological Survey). 2019. Earthquake zones of required investigation. Website. <https://maps.conservation.ca.gov/cgs/EQZApp/app/> [Accessed July 2019]. Prepared by CGS, Sacramento, California.

CNPS (California Native Plant Society). 2012. Inventory of rare and endangered plants of California (online edition, version 8-01a). D. P. Tibor, editor. Rare Plant Scientific Advisory Committee, California Native Plant Society, Sacramento, California. <http://www.rareplants.cnps.org>

Coleman, J. A. 2012. Cultural resource survey report for the Lynch Canyon Dam Project, Solano County, California. Prepared by Solano Archaeological Services, Suisun City, California for The Solano Land Trust, Fairfield, California.

Division of Mines and Geology. 1993. Cordelia quadrangle. 7.5-minute series (topographic). The Resources Agency, California. <http://gmw.consrv.ca.gov/shmp/download/ap/pdf/CORDELIA.PDF>

DRM (Department of Resource Management). 2008. Solano County General Plan. Solano County Department of Resource Management, Fairfield, California. http://www.co.solano.ca.us/depts/rm/planning/general_plan.asp

DTSC (Department of Toxic Substances Control). 2012. EnviroStor online database. http://www.envirostor.dtsc.ca.gov/public/search.asp?page=3&cmd=search&business_name=&main_street_name=&city=&zip=&county=&status=ACT%2CBKLG%2CCOM&branch=&site_type=CSITES%2COPEN%2CFUDS%2CCLOSE&npl=&funding=&reporttitle=HAZARDOUS+WAST

Division (Division of Water Rights). 2010. Policy for maintaining instream flows in Northern California coastal streams. Prepared by State Water Resources Control Board, Division of Water Rights, Sacramento, California.

Dunk, J. R. 1995. White-tailed kite (*Elanus leucurus*), The birds of North America Online. A. Poole, editor. Cornell Lab of Ornithology, Ithaca, New York. <http://bna.birds.cornell.edu/bna/species/178/articles/breeding>

Epstein, J. 2006. Breeding bird atlas surveys, January–April. Napa-Solano Audubon. [as cited in SLT and PG&E 2007].

Fishbain, L., D. Carey, and T. Phillippi. 1997. Analysis of the American Canyon Creek watershed. Solano County, Fairfield, California. [as cited in RMI 1998]

Gatto, M. 2014. Assembly Bill No. 52, Chapter 532: An act to amend Section 5097.94 of, and to add Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to, the Public Resources Code, relating to Native Americans.

Graymer, R. W., E. E. Brabb, and D. L. Jones. 1999. Geology of the Cordelia and the northern part of the Benicia 7.5 minute quadrangles, California: a digital map database. Pamphlet derived from digital USGS Open-File Report 99-162. U.S. Geological Survey, Menlo Park, California. <http://pubs.usgs.gov/of/1999/of99-162/cdbgegeo.txt>

Hallock, R. J., W. F. Van Woert, and L. Shapovalov. 1961. An evaluation of stocking hatchery-reared steelhead rainbow trout (*Salmo gairdnerii gairdnerii*) in the Sacramento River system. Fish Bulletin. 114. California Department of Fish and Game.

Holland, R. F. 1986. Preliminary descriptions of the terrestrial natural communities of California. California Department of Fish and Game, Nongame-Heritage Program, Sacramento.

Holland, D. C. 1994. The western pond turtle: habitat and history. Final report. Bonneville Power Administration, Portland, Oregon.

Kochert, M. N., K. Steenhof, C. L. McIntyre, and E. H. Craig. 2002. Golden eagle (*Aquila chrysaetos*). The birds of North America Online. A. Poole, editor. Cornell Lab of Ornithology, Ithaca, New York. <http://bna.birds.cornell.edu/bna/species/684>
doi:10.2173/bna.684

Kupferberg, S. J. 1996. Hydrologic and geomorphic factors affecting conservation of a river-breeding frog (*Rana boylei*). Ecological Applications 6: 1332–1344.

Lannoo, M. J., editor. 2005. Amphibian declines: the conservation status of United States species. University of California Press, Berkeley.

Leidy, R. A., G. Becker, and B. N. Harvey. 2005. Historical distribution and current status of steelhead/rainbow trout (*Oncorhynchus mykiss*) in streams of the San Francisco Estuary, California. Center for Ecosystem Management and Restoration, Oakland, California.

Linacre, E. T. 1977. A simple formula for estimating evaporation rates in various climates, using temperature data alone. Agricultural Meteorology 18: 409-424.
<http://www.sciencedirect.com/science/article/pii/0002157177900073>

Lowther, P. E., C. Celada, N. K. Klein, C. C. Rimmer and D. A. Spector. 1999. Yellow warbler (*Setophaga petechia*). The birds of North America Online. A. Poole, editor. Cornell Lab of Ornithology, Ithaca, New York.
<http://bna.birds.cornell.edu/bna/species/454/articles/breeding>

LSA Associates. 2008. Salmonid habitat assessment: Solano Habitat Conservation Plan. Prepared for Solano County Water Agency, Vacaville, California.

LSA Associates. 2009. Solano Multispecies Habitat Conservation Plan. Prepared for Solano County Water Agency, Vacaville, California.
http://www.scwa2.com/Conservation_Habitat_FinalAdminDraft.aspx

Mazur, L., and C. Milanes. 2009. Indicators of climate change in California. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Integrated Risk Assessment Branch, Sacramento.
<http://oehha.ca.gov/multimedia/epic/pdf/ClimateChangeIndicatorsApril2009.pdf>

McEwan, D., and T. A. Jackson. 1996. Steelhead restoration and management plan for California. Management Report. California Department of Fish and Game, Inland Fisheries Division, Sacramento.

Meisler, J. A. 2002. Biological survey of the Vallejo Swett Ranch and Eastern Swett Ranch, Solano County, California. Solano Land Trust, Fairfield, California. [as cited in SLT and PG&E 2007]

Mills, T. J., and F. Fisher. 1994. Central Valley anadromous sport fish annual run-size, harvest, and population estimates, 1967 through 1991. Inland Fisheries Technical Report. California Department of Fish and Game.

Moyle, P. B. 2002. Inland fishes of California. Revised edition. University of California Press, Berkeley.

NMFS (National Marine Fisheries Service). n.d. California steelhead Distinct Population Segments (DPS). Map. Prepared by NMFS, Southwest Regional Office, Long Beach, California.

NMFS. 2005. Designation of critical habitat for seven evolutionarily significant units of Pacific salmon and steelhead in California. Federal Register 70: 52488-52627.

Natural Resources Conservation Service. 2012. Custom soil resource report for Solano County, California, Lynch Ranch Dam. Web Soil Survey Version 5, December 12, 2007. <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

OPR (Office of Planning and Research). 2015. Discussion Draft Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA. Prepared by State of California Governor's Office of Planning and Research, Sacramento, California.

Pipal, K. A. 2005. Summary of monitoring activities for ESA-listed salmonids in California's Central Valley. NOAA-TM-NMFS-SWFSC-373. Prepared by National Marine Fisheries Service, Southwest Fisheries Science Center, Santa Cruz, California.

Poerner, K. 2006. Site monitoring and surveys. Solano Land Trust, Fairfield, California. [as cited in SLT and PG&E 2007]

Poole, A. F., P. Lowther, J. P. Gibbs, F. A. Reid and S. M. Melvin. 2009. Least bittern (*Ixobrychus exilis*). The birds of North America Online. A. Poole, editor. Cornell Lab of Ornithology, Ithaca, New York. <http://bna.birds.cornell.edu/bna/species/017/articles/breeding>

RMI (Resource Management International). 1998. Lynch Canyon Resource Management Plan. Prepared by Resource Management International, Inc. for the Solano County Farmlands and Open Space Foundation, Fairfield, California.

Reynolds, F. L., T. J. Mills, R. Benthin, and A. Low. 1993. Restoring Central Valley streams: a plan for action. California Department of Fish and Game, Inland Fisheries Division, Sacramento.

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A manual of California vegetation. Second edition. California Native Plant Society in collaboration with California Department of Fish and Game, Sacramento, California.

SFBRWQCB (San Francisco Bay Region Water Quality Control Board). 2011. San Francisco Bay Basin (Region 2) Water Quality Control Plan. California Regional Water Quality Control Board, San Francisco Bay Region, Oakland, California.

SLT and PG&E (Solano Land Trust and Pacific Gas & Electric Company). 2007. Initial baseline survey for Vellejo Swett, Eastern Swett, and King Ranches, Solano County, California.

Stern, G., J. Nielsen, G. Becker, J. Smith, B. Cox, P. Alexander, D. McEwan, M. Croom, K. Kull, and S. Akin. n.d. Salmon and steelhead in your creek: restoration and management of anadromous fish in Bay Area watersheds. Presentation summaries.

Stillwater Sciences. 2003. Fish survey report for an unnamed tributary to Cordelia Slough. Document No. CTSW-RT-03-087.51.27. Prepared by Stillwater Sciences, Davis, California for California Department of Transportation, District 4, Oakland, California.

Stillwater Sciences. 2008. Delineation of jurisdictional waters and wetlands of the United States at Lynch Canyon Open Space, Solano Land Trust Lynch Canyon Water Rights Project, Solano County, California. Prepared by Stillwater Sciences, Arcata, California for the State Water Resources Control Board, Sacramento, California.

Stillwater Sciences. 2009. Water availability analysis for Lynch Canyon Reservoir: Water Rights Application #30949. Stillwater Sciences, Berkeley, California

http://www.waterboards.ca.gov/waterrights/water_issues/programs/instream_flows/docs/ab2121_0210/adopted050410instreamflowpolicy.pdf

Stillwater Sciences. 2012. Addendum to water availability analysis for Lynch Canyon Reservoir: Water Rights Application #30949. Technical Memorandum. Stillwater Sciences, Berkeley, California.

Stillwater Sciences. 2013. Draft meeting notes: Solano Land Trust Lynch Canyon Open Space. Water Rights Application #30949. April 9, 2013. Stillwater Sciences, Berkeley, California.

SVP (Society of Vertebrate Paleontology). 2013. Conformable Impact Mitigation Guidelines. Assessment and mitigation of adverse impacts to nonrenewable paleontologic resources: standard guidelines.

<http://vertpaleo.org/The-Society/Statements-and-Guidelines/Conformable-Impact-Mitigation-Guidelines-Committee.aspx>

Solano Land Trust. 2012. Lynch Canyon Dam 7000-90. Letter from Solano Land Trust, Fairfield, California to California Department of Water Resources, Sacramento, California.

SWRCB (State Water Resources Control Board). 2007. Memorandum of understanding for preparation of environmental document and water availability analysis for Application 30949 of Solano Land Trust to appropriate water from an unnamed stream tributary to Cordelia Slough thence Suisun Slough thence Suisun Bay, in Solano County. Letter from State Water Resources Control Board, Sacramento, California to Solano Land Trust, Fairfield, California.

SWRCB. 2014. Policy for maintaining instream flows in northern California coastal streams. SWRCB, Division of Water Rights, Sacramento, California.
https://www.waterboards.ca.gov/waterrights/water_issues/programs/instream_flows/docs/adopted_policy.pdf

SWRCB. 2019. State Wetland Definition and Procedures for Discharges of Dredged and Fill Material to Waters of the State. Adopted April 2, 2019; effective May 28, 2020. Available at:
https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/procedures_confirmed.pdf [Accessed September 2020].

Tarof, S., and C. R. Brown, C. R. 2013. Purple martin (*Progne subis*). The birds of North America online. A. Poole, editor. Cornell Lab of Ornithology, Ithaca, New York.
<http://bna.birds.cornell.edu/bna/species/287/articles/introduction>

USACE and USEPA. 2020. The Navigable Waters Protection Rule: Definition of “Waters of the United States.” Published April 21, 2020; effective June 22, 2020. Available at: <https://www.federalregister.gov/documents/2020/04/21/2020-02500/the-navigable-waters-protection-rule-definition-of-waters-of-the-united-states> [Accessed September 2020].

USEPA. 1996. National ambient air quality standards for nitrogen dioxide: final decision. Federal Register 61: 52852-52856. <http://www.gpo.gov/fdsys/pkg/FR-1996-10-08/pdf/96-25786.pdf#page=1>

USEPA. 2006. National ambient air quality standards for particulate matter: final rule. Federal Register 71: 61144-61233. <http://www.gpo.gov/fdsys/pkg/FR-2006-10-17/pdf/06-8477.pdf#page=1>

USEPA. 2008. EPA’s Report on the Environment: highlights of national trends. EPA/600/R-07/045F. Washington, D.C.
<http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=190806>

USEPA. 2010a. Primary national ambient air quality standards for nitrogen dioxide, Part II. Final rule. Federal Register 75: 35520-35603. <http://www.gpo.gov/fdsys/pkg/FR-2010-06-22/pdf/2010-13947.pdf>

USEPA. 2010b. Primary national ambient air quality standards for nitrogen dioxide, Part III. Final rule. Federal Register 75: 6474-6537. <http://www.gpo.gov/fdsys/pkg/FR-2010-02-09/pdf/2010-1990.pdf>

USEPA. 2011. Review of national ambient air quality standards for carbon monoxide. Federal Register 76: 54294-54343. <http://www.gpo.gov/fdsys/pkg/FR-2011-08-31/pdf/2011-21359.pdf#page=2>

USEPA. 2015. National ambient air quality standards for ozone: final rule. Federal Register 80: 65292-65468. <https://www.epa.gov/naaqs/ozone-o3-standards-federal-register-notices-review-completed-2015>

USFWS (U.S. Fish and Wildlife Service). 1996. Guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants. http://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/Listed_plant_survey_guidelines.PDF

USFWS. 2002. Recovery plan for the California red-legged frog (*Rana aurora draytonii*). USFWS, Region 1, Portland, Oregon. http://ecos.fws.gov/docs/recovery_plan/020528.pdf

USFWS. 2006. Transmittal of guidance: estimated the effects of auditory and visual disturbance to northern spotted owls and marbled murrelets in northwestern California. Memorandum. Prepared by USFWS, Arcata Fish and Wildlife Office, Arcata, California.

USFWS. 2010. Endangered and threatened wildlife and plants; revised designation of critical habitat for California red-legged frog. Federal Register 75: 12815-12959.

USFWS. 2012. Federal endangered and threatened species that occur in or may be affected by projects in the counties and/or USGS 7 1/2-minute quads you requested: Cordelia (482B) [*database last updated September 18 2011*]. Document Number 120629033000. http://www.fws.gov/sacramento/es/spp_lists/auto_list_form.cfm

USGS (U.S. Geological Survey). 2012. Liquefaction hazard maps, San Francisco Bay Area. USGS, Western Region, Menlo Park, California. <http://earthquake.usgs.gov/regional/nca/qmap/>

Wagner, D. H. 1991. The "1-in-20 rule" for plant collectors. Plant Science Bulletin 37:11.

Wiggins, D. A., D. W. Holt and S. M. Leasure. 2006. Short-eared owl (*Asio flammeus*), The birds of North America Online. A. Poole, editor. Cornell Lab of Ornithology, Ithaca, New York. <http://bna.birds.cornell.edu/bna/species/062> doi:10.2173/bna.62

York, A., L. Jang, D.A. Fredrickson. 1983. A cultural resource survey of the proposed Lynch Canyon landfill site, southwestern Solano County, California. Sonoma State University, Cultural Resource Facility.

Yoshiyama, R. M., E. R. Gerstung, F. W. Fisher, and P. B. Moyle. 2001. Historical and present distribution of Chinook salmon in the Central Valley drainage of California. Pages 71–176 in R. L. Brown, editor. Contributions to the biology of Central Valley salmonids. Fish Bulletin 179: Volume 1. California Department of Fish and Game, Sacramento.

Zweifel, R. G. 1955. Ecology, distribution, and systematics of frogs of the *Rana boylei* group. University of California Publications in Zoology 54: 207–292.

Personal Communications

Azevedo, Ron, and Ralph Azevedo. 2007. Personal communication with Sue Wickham, Solano Land Trust (sent in e-mail message to Maia Singer, Stillwater Sciences, February 28, 2008).

Azevedo, Ron, and Ralph Azevedo. 2008. Personal communication with S. Wickham. 2008. [as cited in *Stillwater Sciences 2013 meeting notes, but they were present at the meeting as well*]

Bowlus, R. 2012. Personal communication. DSOD. June 18, 2012

Bonsignore, N. 2011. Personal communication. Wagner & Bonsignore, Consulting Civil Engineers, Sacramento, California. May 25, 2011.

Foreman, S. Personal communication. LSA Associates, Point Richmond, California.

Gray, C. 2011. Personal communication. California Department of Fish and Wildlife. [as cited in *Stillwater Sciences 2013*]

Henke, A. 2006. Personal communication. Terrestrial Biologist, Pacific Gas & Electric Company Environmental Services, San Ramon, California [as cited in *SLT and PG&E 2007*].

Leidy, R. 2011. Personal communication. U.S. Environmental Protection Agency, San Francisco, California (email exchange re: historical distribution of *O. mykiss* in northern California and the Bay Area with L. Dusek).

Logan, D. 2011. Personal communication. National Marine Fisheries Service, Protected Resources Division, Arcata, California (email exchange with L. Dusek, Stillwater Sciences, Arcata, California, April 12-28, 2011).

Sandman, S. 2012. Personal communication. Migratory Bird Program, U. S. Fish and Wildlife Service. (email exchange with L. Dusek, Stillwater Sciences, Arcata, California, July 11, 2012).

Stern, G. 2011. Personal communication. National Marine Fisheries Service, San Francisco Bay Region Supervisor, Santa Rosa, California (email exchange with L. Dusek, Stillwater Sciences, Arcata, California, April 12-28, 2011).

Wickham, S. 2011. Personal communication. [re: fish stocking of Lynch Canyon Reservoir]. Solano Land Trust, Fairfield, California. [*as cited in SLT and PG&E 2007*]

Wickham, S. 2013. Personal communication. Solano Land Trust, Fairfield, California.

CDFW staff, Yountville Office, California. Personal communication.

Attachments

Attachment A Potentially Occurring Special-status Plant Species

Table A-1. List of all potentially occurring special-status plant species in the Proposed Project Area.

Scientific name	Common name	Source	Status ¹ CRPR/State/ Federal	Habitat associations	Elevation m (ft)	Blooming period	Potential habitat
Plant Species							
<i>Arabis modesta</i>	modest rock cress	CNPS	4.3/--/--	Chaparral and lower montane coniferous forest	120-800 m (394-2,625 ft)	March–July	No
<i>Astragalus tener</i> var. <i>tener</i>	alkali milk- vetch	CNPS, CNDDB	1B.2/--/--	Playas, valley and foothill grassland on adobe clay, and alkaline vernal pools	1–60 m (3–197 ft)	March–June	Yes
<i>Atriplex joaquiniana</i>	San Joaquin spearscale	CNPS, CNDDB	1B.2/--/--	Chenopod scrub, meadows and seeps, playas, and alkaline areas of valley and foothill grassland	1–835 m (3–2,739 ft)	April– October	Yes
<i>Atriplex persistens</i>	vernal pool small-scale	CNPS, CNDDB	1B.2/--/--	Alkaline vernal pools	10–115 m (33–377 ft)	June– October	No
<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	big-scale balsamroot	CNPS, CNDDB	1B.2/--/--	Chaparral, cismontane woodland, and sometimes serpentinite areas of valley and foothill grassland	90–1,555 m (295–5,102 ft)	March–June	Yes
<i>Blepharizonia plumose</i>	big tarplant	CNPS, CNDDB	1B.1/--/--	Usually clay areas of valley and foothill grassland	30–505 m (98–1,657 ft)	July–October	No
<i>Brodiaea californica</i> var. <i>leptandra</i>	narrow- anthered California brodiaea	CNPS, CNDDB	1B.2/--/--	Broad leaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and volcanic areas of valley and foothill grassland	110–915 m (361–3,002 ft)	May–July	Yes
<i>Calandrinia breweri</i>	Brewer's calandrinia	CNPS	4.2/--/--	Sandy or loamy soils, disturbed sites and burns in chaparral and coastal scrub	10–1,220 m (33–4,003 ft)	March–June	Yes

Scientific name	Common name	Source	Status ¹ CRPR/State/ Federal	Habitat associations	Elevation m (ft)	Blooming period	Potential habitat
<i>Calochortus pulchellus</i>	Mt. Diablo fairy-lantern	CNPS, CNDDDB	1B.2/--/--	Chaparral, cismontane woodland, riparian woodland, an valley and foothill grassland	30–840 m (98–2,756 ft)	April–June	Yes
<i>Castilleja affinis</i> ssp. <i>neglecta</i>	Tiburon paintbrush	CNPS, CNDDDB, USFWS	1B.2/ Threatened/ Endangered	Serpentine areas in valley and foothill grassland	60–400 m (197–1,312 ft)	April–June	Yes
<i>Ceanothus purpureus</i>	holly-leaved ceanothus	CNPS, CNDDDB	1B.2/--/--	Rocky areas of chaparral and volcanic areas of cismontane woodland	120–640 m (39–4,2100 ft)	February– June	No
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Congdon's tarplant	CNPS, CNDDDB	1B.2/--/--	Alkaline areas of valley and foothill grassland	0–230 m (0–755 ft)	May–October (November) ¹	No
<i>Centromadia parryi</i> ssp. <i>parryi</i>	pappose tarplant	CNPS, CNDDDB	1B.2/--/--	Chaparral, coastal prairie, meadows and seeps, coastal saline marshes and swamps, and vernal mesic often alkaline areas of valley and foothill grassland	2–420 m (7–1,378 ft)	May– November	Yes
<i>Centromadia parryi</i> ssp. <i>rudis</i>	Parry's rough tarplant	CNPS	4.2/--/--	Alkaline, vernal mesic seeps, sometimes roadsides, valley and foothill grassland, and vernal pools	0–100 m (0–328 ft)	May–October	No
<i>Chloropyron molle</i> ssp. <i>molle</i> [<i>Cordylanthus mollis</i> ssp. <i>mollis</i>]	soft bird's-beak	CNPS, CNDDDB, USFWS	1B.2/Rare/ Endangered	Coastal salt marshes and swamps	0–3 m (0–10 ft)	July– November	No
<i>Cicuta maculata</i> var. <i>bolanderi</i>	Bolander's water-hemlock	CNPS, CNDDDB	2.1/--/--	Coastal, fresh or brackish water marshes and swamps	0–200 m (0–656 ft)	July– September	No
<i>Cirsium hydrophilum</i> var. <i>hydrophilum</i>	Suisun thistle	CNPS, CNDDDB, USFWS	1B.1/--/ Endangered	Salt marshes and swamps	0–1 m (0–3 ft)	June– September	No

Scientific name	Common name	Source	Status ¹ CRPR/State/ Federal	Habitat associations	Elevation m (ft)	Blooming period	Potential habitat
<i>Dirca occidentalis</i>	western leatherwood	CNPS, CNDDDB	1B.2/--/--	Broad leaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, and mesic riparian woodland	25–395 m (82–1,296 ft)	January– March (April) ¹	Yes
<i>Downingia pusilla</i>	dwarf downingia	CNPS, CNDDDB	2.2/--/--	Mesic valley and foothill grassland and vernal pools	1–445 m (3–1,460 ft)	March–May	Yes
<i>Erigeron biolettii</i>	streamside daisy	CNPS	3/--/--	Broad leaved upland forest, cismontane woodland, and rocky or mesic areas of north coast coniferous forest	30–1100 m (98–3,609 ft)	June– October	No
<i>Erigeron greenei</i>	Greene's narrow-leaved daisy	CNPS, CNDDDB	1B.2/--/--	Serpentinite or volcanic areas of chaparral	80–1,005 m (262–3,297 ft)	May– September	No
<i>Eriogonum luteolum</i> var. <i>caninum</i>	Tiburon buckwheat	CNPS	1B.2/--/--	Sandy to gravelly areas of chaparral, cismontane woodland, coastal prairie, serpentinite valley and foothill grassland	0–700 m (0–2,297 ft)	May– September	Yes
<i>Eriogonum truncatum</i>	Mt. Diablo buckwheat	CNPS, CNDDDB	1B.1/--/--	Chaparral, coastal scrub, sandy areas of valley and foothill grassland	3–350 m (10–1,148 ft)	April– September (November) ¹	Yes
<i>Fritillaria liliacea</i>	fragrant fritillary	CNPS, CNDDDB	1B.2/--/--	Cismontane woodland, coastal prairie, coastal scrub, often serpentinite areas of valley and foothill grassland	3–410 m (10–1,345 ft)	February– April	Yes
<i>Gilia capitata</i> ssp. <i>tomentosa</i>	woolly-headed gilia	CNPS	1B.1/--/--	Rocky, outcrops in coastal bluff scrub, serpentinite areas of valley and foothill grassland	10–220 m (33–722 ft)	May–July	No
<i>Harmonia nutans</i>	nodding harmonia	CNPS	4.3/--/--	Rocky or gravelly, volcanic areas in chaparral, cismontane woodland	75–975 m (246–3,199 ft)	March–May	No

Scientific name	Common name	Source	Status ¹ CRPR/State/ Federal	Habitat associations	Elevation m (ft)	Blooming period	Potential habitat
<i>Helianthella castanea</i>	Diablo helianthella	CNPS, CNDDDB	1B.2/--/--	Broad leaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland	60–1,300 m (197–4,265 ft)	March–June	Yes
<i>Hesperolinon breweri</i>	Brewer's western flax	CNPS, CNDDDB	1B.2/--/--	Chaparral, cismontane woodland, and usually serpentinite areas of valley and foothill grassland	30–900 m (98–2,953 ft)	May–July	Yes
<i>Hesperolinon serpentinum</i>	Napa western flax	CNPS	1B.1/--/--	Serpentinite areas of chaparral	50–800 m (164–2,625 ft)	May–July	No
<i>Hesperolinon tehamense</i>	Tehama County western flax	CNPS, CNDDDB	1B.3/--/--	Chaparral and serpentinite areas of cismontane woodland	100–1,250 m (328–4,101 ft)	May–July	No
<i>Holocarpha macradenia</i>	Santa Cruz tarplant	CNPS, CNDDDB	1B.1/ Endangered/ Threatened	Coastal prairie, coastal scrub, and often clay or sandy areas of valley and foothill grassland	10–220 m (33–722 ft)	June– October	No
<i>Iris longipetala</i>	coast iris	CNPS	4.2/--/--	Mesic areas of coastal prairie, lower montane coniferous forest, and meadows and seeps	0–600 m (0–1,968 ft)	March–May	Yes
<i>Isocoma arguta</i>	Carquinez goldenbush	CNPS, CNDDDB	1B.1/--/--	Alkaline areas of valley and foothill grassland	1–20 m (3–66 ft)	August– December	No
<i>Juglans hindsii</i>	Northern California black walnut	CNPS, CNDDDB	1B.1/--/--	Riparian forest and riparian woodland	0–440 m (0–1,444 ft)	April–May	Yes
<i>Lasthenia conjugens</i>	Contra Costa goldfields	CNPS, CNDDDB, USFWS	1B.1/--/ Endangered	Cismontane woodland, alkaline playas, valley and foothill grassland, and mesic vernal pools	0–470 m (0–1,542 ft)	March–June	Yes
<i>Lasthenia ferrisiae</i>	Ferris' goldfields	CNPS	4.2/--/--	Alkaline or clay vernal pools	20–700 m (66–2,297 ft)	February– May	No
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	Delta tule pea	CNPS, CNDDDB	1B.2/--/--	Freshwater or brackish marshes and swamps	0–1 m (0–13 ft)	May–July (September) ¹	No

Scientific name	Common name	Source	Status ¹ CRPR/State/ Federal	Habitat associations	Elevation m (ft)	Blooming period	Potential habitat
<i>Legenere limosa</i>	legenere	CNPS, CNDDB	1B.1/--/--	Vernal pools	1–880 m (3–2,887 ft)	April–June	No
<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	CNPS, CNDDB	1B.2/--/--	Chaparral and usually volcanic areas of cismontane woodland	100–500 m (328–1,640 ft)	March–May	No
<i>Lessingia hololeuca</i>	woolly-headed lessingia	CNPS	3/--/--	Serpentinite areas of broad-leaved upland forest, coastal scrub, lower montane coniferous forest, and clay areas of valley and foothill grassland	15–305 m (49–1,001 ft)	June–October	No
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	CNPS, CNDDB	1B.1/Rare/--	Brackish or freshwater marshes and swamps and riparian scrub	0–10 m (0–33 ft)	April–November	No
<i>Lilium rubescens</i>	redwood lily	CNPS	4.2/--/--	Sometimes serpentinite or roadsides, broad leaved upland forest, chaparral, lower montane coniferous forest, north coast coniferous forest, and upper montane coniferous forest	30–1,910 m (98–6,266 ft)	April–September	No
<i>Limosella subulata</i>	Delta mudwort	CNPS, CNDDB	2.1/--/--	Marshes and swamps	0–3 m (0–10 ft)	May–August	No
<i>Lomatium repostum</i>	Napa lomatium	CNPS	4.3/--/--	Serpentinite areas of chaparral and cismontane woodland	90–830 m (295–2,723 ft)	March–June	No
<i>Micropus amphiboles</i>	Mt. Diablo cottonweed	CNPS	3.2/--/--	Broad leaved upland forest, chaparral, cismontane woodland, and rocky areas of valley and foothill grassland	45–825 m (148–2,707 ft)	March–May	Yes
<i>Monardella viridis</i> ssp. <i>viridis</i>	green monardella	CNPS	4.3/--/--	Broad leaved upland forest, chaparral, and cismontane woodland	100–1,010 m (328–3,314 ft)	June–September	No
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	CNDDB	1B.1/--/--	Mesic areas of cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and vernal pools	5–1,740 m (16–5,709 ft)	April–July	Yes

Scientific name	Common name	Source	Status ¹ CRPR/State/ Federal	Habitat associations	Elevation m (ft)	Blooming period	Potential habitat
<i>Polygonum marinense</i>	Marin knotweed	CNPS, CNDDDB	3.1/--/--	Coastal salt or brackish marshes and swamps	0–10 m (0–33 ft)	(April) ¹ May–August (October) ¹	No
<i>Rhynchospora californica</i>	California beaked-rush	CNPS, CNDDDB	1B.1/--/--	Bogs and fens, lower montane coniferous forest, meadows and seeps, and freshwater marshes and swamps	45–1,010 m (148–3,314 ft)	May–July	Yes
<i>Senecio aphanactis</i>	chaparral ragwort	CNPS, CNDDDB	2.2/--/--	Chaparral, cismontane woodland, and sometimes alkaline areas of coastal scrub	15–800 m (49–2,625 ft)	January–April	No
<i>Sidalcea hickmanii</i> ssp. <i>nepensis</i>	Napa checkerbloom	CNPS, CNDDDB	1B.1/--/--	Rhyolitic areas of chaparral	415–610 m (1,362–2,001 ft)	April–June	No
<i>Sidalcea hickmanii</i> ssp. <i>viridis</i>	Marin checkerbloom	CNPS	1B.3/--/--	Serpentinite areas of chaparral	50–430 m (164–1,411 ft)	May–June	No
<i>Stuckenia filiformis</i>	slender-leaved pondweed	CNPS, CNDDDB	2.2/--/--	Assorted shallow freshwater marshes and swamps	300–2,150 m (984–7,054 ft)	May–July	Yes
<i>Symphotrichum lentum</i>	Suisun Marsh aster	CNPS, CNDDDB	1B.2/--/--	Brackish and freshwater marshes and swamps	0–3 m (0–10 ft)	May–November	No
<i>Trichostema ruygtii</i>	Napa bluecurls	CNPS, CNDDDB	1B.2/--/--	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, and vernal pools	30–680 m (98–2,231 ft)	June–October	Yes
<i>Trifolium amoenum</i>	two-fork clover	CNPS, CNDDDB	1B.1/--/ Endangered	Coastal bluff scrub and sometimes serpentinite areas of valley and foothill grassland	5–415 m (16–1,362 ft)	April–June	Yes
<i>Trifolium hydrophilum</i>	saline clover	CNPS, CNDDDB	1B.2/--/--	Marshes and swamps, mesic or alkaline areas of valley and foothill grassland, and vernal pools	0–300 m (0–984 ft)	April–June	No
<i>Triteleia lugens</i>	dark-mouthed triteleia	CNPS	4.3/--/--	Broad leaved upland forest, chaparral, coastal scrub, and lower montane coniferous forest	100–1,000 m (328–3,281 ft)	April–June	No

Scientific name	Common name	Source	Status ¹ CRPR/State/ Federal	Habitat associations	Elevation m (ft)	Blooming period	Potential habitat
<i>Viburnum ellipticum</i>	oval-leaved viburnum	CNPS, CNDDDB	2.3/--/--	Chaparral, cismontane woodland, and lower montane coniferous forest	215–1,400 m (705–4,593 ft)	May–June	No

Scientific name	Common name	Source	Status ¹ CRPR/State/ Federal	Habitat associations	Elevation m (ft)	Blooming period	Potential habitat
Plant Communities							
N/A	Coastal Brackish Marsh	CNDDB	--/--/--	N/A	N/A	N/A	No
N/A	Northern Claypan Vernal Pool	CNDDB	--/--/--	N/A	N/A	N/A	No
N/A	Northern Coastal Salt Marsh	CNDDB	--/--/--	N/A	N/A	N/A	No
N/A	Northern Vernal Pool	CNDDB	--/--/--	N/A	N/A	N/A	No
N/A	Serpentine Bunchgrass	CNDDB	--/--/--	N/A	N/A	N/A	No
USFWS Critical Habitat							
Lasthenia conjugens	Contra Costa goldfields	USFWS	--/--/--	N/A	N/A	N/A	No

¹ All months in parentheses are reported occurrences of blooming for that species that are relatively rare compared to the general blooming window.