

STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS
P.O. BOX 2000
SACRAMENTO, CA 95812-2000

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

I. Background

PROJECT TITLE: Application to Appropriate Water

APPLICATION: 30745

APPLICANT: Peter Michael
12400 Ida Clayton Road
Calistoga, CA 94515

APPLICANT'S CONTACT PERSON: Nick Bonsignore, Wagner & Bonsignore,
2151 River Plaza Drive, Suite 100, Sacramento, CA 95833-4133, 916-441-6850

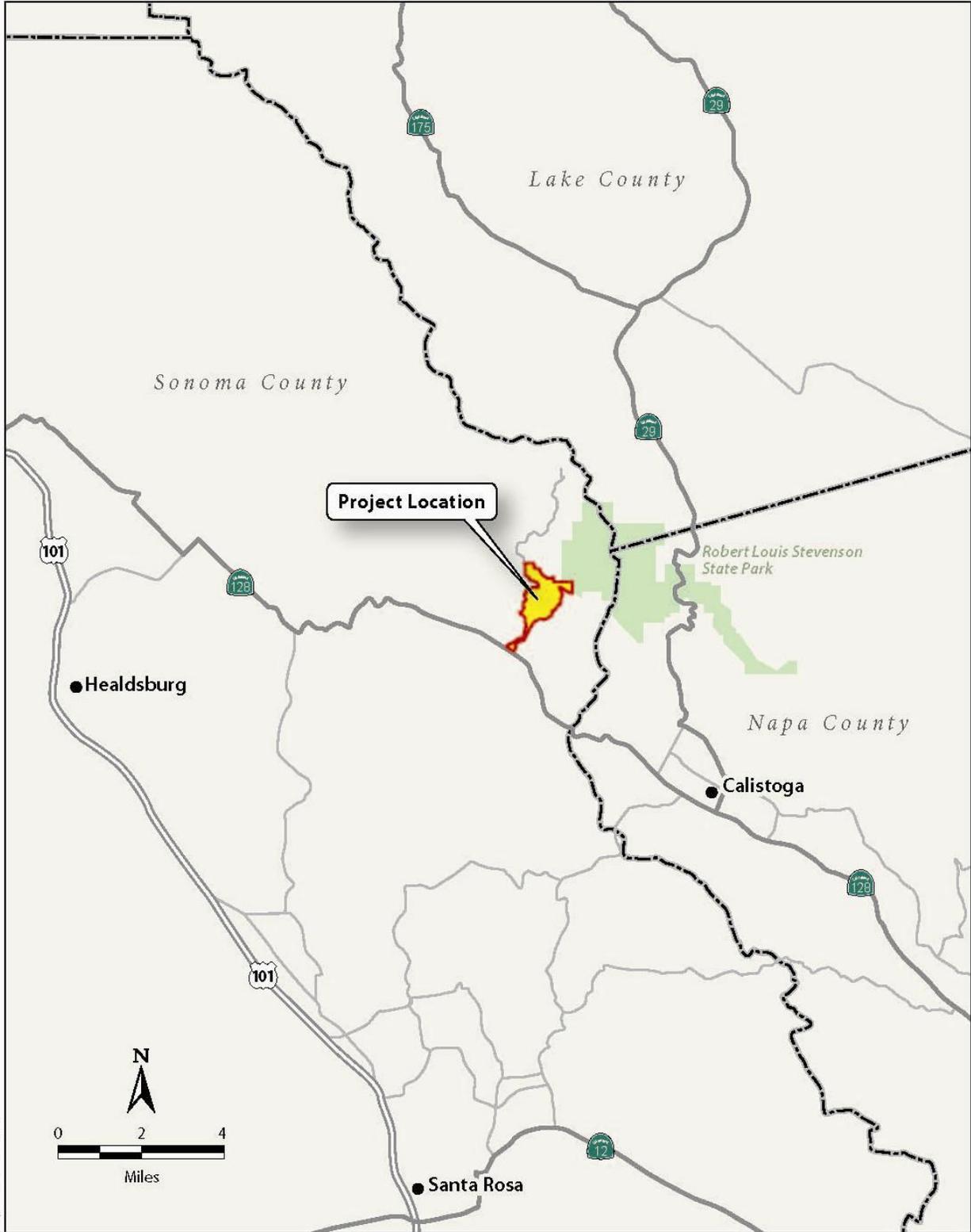
General Plan Designation: RRD—Resources and Rural Development

Zoning: RRD—Resources and Rural Development

Introduction

The proposed project area is within the Maacama Creek watershed in the Knights Valley region of northeastern Sonoma County, located at 12400 Ida Clayton Road, approximately 6 miles northwest of the town of Calistoga and approximately 15 miles east of the town of Healdsburg (Figure 1). The proposed project area is within projected Sections 5 and 8, Township 9 North and Range 7 West, MDB&M, and is on the Mount Saint Helena 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle. The proposed project area (i.e., property limit, also referred herein as the Home Ranch property) consists of about 605 acres of land, while the Place of Use (POU) for irrigation within the proposed project area under Application 30745 is 151 acres (Figure 2). The main access road to the central portion of the proposed project area, where the lower reservoir is located, is from Ida Clayton Road to the west (Figure 2). Adjacent landowners have planted vineyards to the south, west, and north; land to the east of the proposed project area consists of steep topography (Mount Saint Helena and its associated ridges).

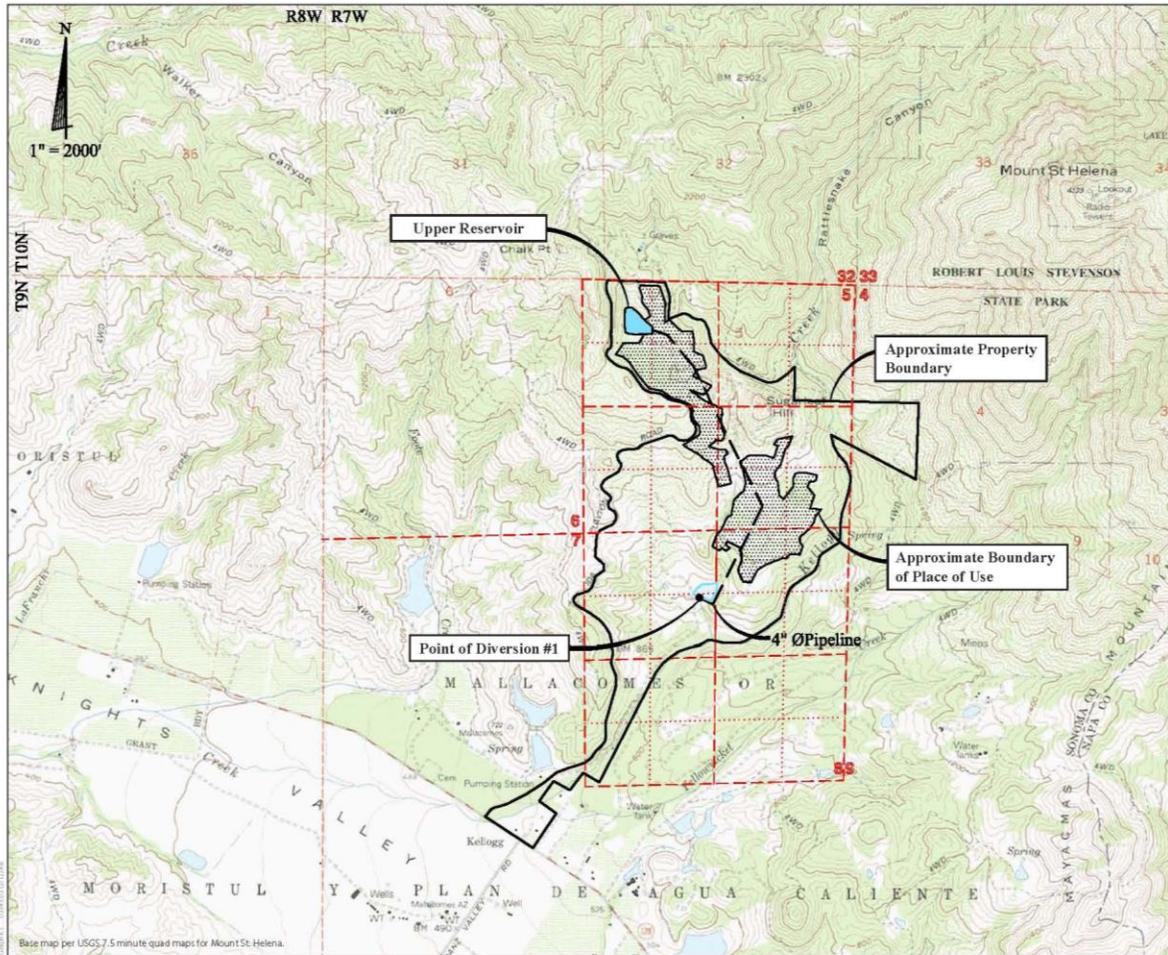
Water Right Application 30745 (proposed project) was filed with the State Water Resources Control Board (State Water Board), Division of Water Rights (Division) on March 23, 1998 and accepted on August 7, 1998. Application 30745 currently seeks a right to appropriate a total of 85 acre-feet per annum (afa) of water from an Unnamed Stream tributary to Kellogg Creek, thence Redwood Creek, thence Maacama Creek, thence the Russian River, for storage behind an existing onstream dam and in an existing offstream reservoir.



Graphics: 03-4503-10/11/AB



Figure 1
Regional Site Location



- Map Point** **Description**
- 1 Point of Diversion to Storage and Offstream Storage:
 Located South 1500' & West 2950' from the NE
 corner of Projected Section 8, T9N, R7W, MDB&M.
- Off-Stream Reservoir** Located in the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Projected
 Section 5, T9N, R7W, MDB&M.

Place of Use

Use is Within	Section	Township	Range	B & M	Acres
NW 1/4 of NW 1/4	5	9N	7W	M.D.	4.6
NE 1/4 of NW 1/4	5	9N	7W	M.D.	12.0
SW 1/4 of NW 1/4	5	9N	7W	M.D.	9.8
SE 1/4 of NW 1/4	5	9N	7W	M.D.	28.5
NE 1/4 of SW 1/4	5	9N	7W	M.D.	13.2
SE 1/4 of SW 1/4	5	9N	7W	M.D.	0.3
NW 1/4 of SE 1/4	5	9N	7W	M.D.	9.2
NE 1/4 of SE 1/4	5	9N	7W	M.D.	0.6
SW 1/4 of SE 1/4	5	9N	7W	M.D.	29.7
SE 1/4 of SE 1/4	5	9N	7W	M.D.	15.0
NE 1/4 of NW 1/4	8	9N	7W	M.D.	0.3
NW 1/4 of NE 1/4	8	9N	7W	M.D.	22.3
NE 1/4 of NE 1/4	8	9N	7W	M.D.	5.5
Total					151.0

Source: Wagner & Bonsignore, 2007



Figure 2
 Project Area Boundary

Project Description

As amended, Application 30745 proposes:

- The seasonal diversion to storage of up to a total of 85 acre-feet (af) from an Unnamed Stream tributary to Kellogg Creek, thence Redwood Creek, thence Maacama Creek, thence the Russian River. The Point of Diversion (POD 1) is located on an existing onstream reservoir (herein referred to as the lower reservoir) and within the SE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of projected Section 8, Township 9 North, Range 7 West, MDB&M. An additional place of storage (offstream reservoir herein shown as and referred to as the upper reservoir) is located within the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of projected Section 5, Township 9 North, Range 7 West, MDB&M.
- Storage of up to 36.5 af at the lower reservoir. Dimensions include maximum effective height of less than or equal to 25 feet, with an approximate embankment length of 370 feet, a storage capacity of 36.5 af, and an approximate surface area of 3.2 acres. Freeboard height above spillway crest is about 1 foot, and maximum water depth is about 23 feet.
- Diversion of up to 48.5 af at POD 1 to storage at the upper reservoir. The rate of diversion to offstream storage is 0.5 cubic foot per second (cfs). Water diverted at POD 1 is pumped to the upper reservoir through a 4-inch-diameter transmission pipeline approximately 8,000 feet long. The upper reservoir also stores water collected from non-jurisdictional sources. Combined, the lower and upper reservoirs have the capacity to store up to a total of 85 af.
- A diversion season of December 15 to March 31.
- The POU (see Figure 2) consists of 151 gross acres of vineyard and the lower reservoir. Proposed water use includes irrigation of the vineyard and recreation at the lower reservoir. Vineyard is irrigated using drip systems. Frost protection occurs through mechanical wind machines (no water is used for frost protection). Acreage distributions within the POU are noted in Table 1 below.

Table 1. Acreage Distributions within the Place of Use

Use Is within	Section (Projected)	Township	Range	B & M	Acres
NW 1/4 of NW 1/4	5	9N	7W	M.D.	4.6
NE 1/4 of NW 1/4	5	9N	7W	M.D.	12.0
SW 1/4 of NW 1/4	5	9N	7W	M.D.	9.8
SE 1/4 of NW 1/4	5	9N	7W	M.D.	28.5
NE 1/4 of SW 1/4	5	9N	7W	M.D.	13.2
SE 1/4 of SW 1/4	5	9N	7W	M.D.	0.3
NW 1/4 of SE 1/4	5	9N	7W	M.D.	9.2
NE 1/4 of SE 1/4	5	9N	7W	M.D.	0.6
SW 1/4 of SE 1/4	5	9N	7W	M.D.	29.7
SE 1/4 of SE 1/4	5	9N	7W	M.D.	15.0
NE 1/4 of NW 1/4	8	9N	7W	M.D.	0.3
NW 1/4 of NE 1/4	8	9N	7W	M.D.	22.3
NE 1/4 of NE 1/4	8	9N	7W	M.D.	5.5
Total					151.0

Project Background

As originally filed, Application 30745 requested the diversion of 85 af of water for storage in three reservoirs (PODs 1, 2, and 3). Water would be used for the purpose of irrigation of 151 acres of vineyard and recreation. The diversion season would be from December 15 to March 31 of each year.

In February 2000, Application 30745 was amended to modify proposed reservoir capacities, eliminate POD 2, and move POD 3 900 feet downstream. Application 30745 was further amended in July 2004 to remove POD 3 (the reservoir located here is considered a place of storage as it is located offstream); and again in August 2007 to clarify the description of the POU.

A public notice was issued for Application 30745 on July 21, 2000 (State Water Resources Control Board 2000). Five protests (see below) were filed against the proposed project at that time, from National Marine Fisheries Service (NMFS), Trout Unlimited of California (TU), the U.S. Fish and Wildlife Service (USFWS), the California Sportsfishing Protection Alliance (CSPA), and MBK Engineers on behalf of Beringer Wine Estates. All protests are currently unresolved.

NMFS expressed concerns about the proposed project resulting in: negative effects on coho salmon and steelhead in the Russian River watershed; negative effects associated with potential reduction or interruption of streamflows in downstream reaches; concerns with the minimum bypass flow; the lower reservoir's potential to interrupt naturally occurring flows necessary for channel maintenance; disruption of available habitat by the lower reservoir; the cumulative effect of this proposed project and other existing

projects; and the effect of diversion structures on fish passage (Bybee 2000). A representative from NMFS visited the project in January 2007 and again in October 2010.

TU expressed concerns about downstream fish habitat being negatively affected by projects in the Russian River watershed (Griffin 2000).

USFWS expressed concerns about the proposed project resulting in take of federally listed species (the federally listed endangered California freshwater shrimp *Syncaris pacifica*) (Miller 2000).

CSPA expressed concerns about the proposed project resulting in: negative effects on coho salmon and steelhead in the Russian River watershed; the original application did not disclose the specific amount of water diverted to offstream storage on a daily basis; how much water will be used for the purpose of recreation; the mandatory daily streamflow requirement from the dam throughout the year; whether the dam on the lower reservoir will have a fish ladder; whether entrainment of aquatic species attributable to lower reservoir operation is considered likely; whether a fish screen will be used at the outlet to the upper reservoir; whether water released from the onstream dam would elevate water temperatures and what appropriate pool levels will be maintained to protect aquatic species in both reservoirs (Baiocchi 2000).

MBK Engineers, on behalf of Beringer Wine Estates claimed senior rights to water from the source from which the Applicant proposes to divert, based upon riparian claims and Applications 26402 (P-18564) and 29267 (P-20619) (MBK Engineers/Beringer Wine Estates 2000).

Environmental Setting and Baseline

The proposed project area is located on a north-south sloping hill area, in the northern portion of the Kellogg Creek watershed (Figure 2). Kellogg Creek is tributary to Redwood Creek, thence Maacama Creek, thence the Russian River. Elevations in the proposed project area range from approximately 500 feet above mean sea level, at the western boundary and flatter portions of the proposed project area, to 1,717 feet at the top of Sugarloaf Hill. Topography consists of rolling hills trending in a north-south alignment with swales. Slopes in the POU and reservoir areas range from approximately 5% to 40%.

Established vineyard is the primary vegetation community in the POU. Outside of the POU, grasslands, oak, and mixed coniferous forests are present. The climate of Sonoma County is characterized by moderate temperature and precipitation. The climate in the study area is characterized by warm, dry summers and cool, rainy winters; the mean annual precipitation is approximately 42 inches, and the mean annual air temperature is 60°F. (Natural Resources Conservation Service 2011.)

The POU presently is fully developed in vineyard. Currently two reservoirs are used for storage of irrigation water. The lower reservoir is an existing onstream reservoir with a storage capacity of 36.5 af, impounded by an embankment dam at POD 1 and is under review per this application. The upper reservoir, which collects runoff from non-jurisdictional sources, has a storage capacity of about 48.5 af. There are three pump stations, two tanks (one of them not in use), an underground cistern with a sump pump, an old sump (no longer in use), two sediment retention basins, and a diesel generator associated with the water conveyance system. There are also three small wetlands in the proposed project area, none of which are within the POU. These wetland areas have not been affected, and will be not be affected, by the proposed project.

ICF Jones & Stokes was retained by Peter Michael to conduct a site visit of the vineyard and to classify the subject waterways for Initial Study descriptive purposes. Five tributaries associated with POD 1, all unnamed, were surveyed (Figure 3). Tributaries 1, 2, and 3 flow generally from north to south into the lower reservoir. Tributary 4, referred to as the *Spillway Channel*, flows from POD 1 approximately 2,644 feet to its confluence with Kellogg Creek. Tributary 5, referred to as the *Historic Channel*, originates about 190 feet below the toe of the dam at POD 1. This ephemeral channel is tributary to Kellogg Creek and is approximately 861 feet long. Tributary 5 was formerly the main contributing channel to Kellogg Creek before construction of the lower reservoir. All stream classifications of these tributaries in the proposed project area are fully described in *Peter Michael Winery, Home Ranch Property (Application 30745)–Stream Classification of Five Unnamed Tributaries to Kellogg Creek, Sonoma County (February 18–19 and March 13, 2008)* (ICF Jones & Stokes 2008).

Supplemental environmental information was submitted at the time Application 30745 was filed and accepted, establishing the environmental baseline as August 7, 1998. The onstream dam at POD 1 was constructed in 1969 or a few years beforehand¹. The latter date would mean that construction of the lower reservoir predated the baseline by at least 29 years. The facility includes an open-channel spillway that conveys spill flows from the lower reservoir to a natural channel that joins Kellogg Creek approximately 2,644 feet downstream. Prior to August 1998, the owner had installed recreational facilities at the lower reservoir, and approximately 112 gross acres of vineyard were existing and being irrigated from the lower reservoir. An additional 32 acres were planted between August 7, 1998, and July 21, 2000² (Figure 4). An additional 7 acres of vineyard were cleared, graded, and prepared in 2004 and planted in 2005 (in accordance with a Sonoma County grading permit as well a Sonoma County Sonoma County Vineyard Erosion and Sediment Control Ordinance [VESCO] application and permit) (Figure 4).

¹ The Applicant has obtained photographs of construction in progress at the lower reservoir that are dated 1969 (a time at which when Kodak put a date on prints). Thus the lower reservoir was constructed in 1969 (or possibly sometime before).

² These 32 acres were previously cleared and graded by a prior owner in the 1970's. Some clearing of vegetation regrowth was required when the Applicant planted between August 7, 1998 and July 21, 2000. Sonoma County Vineyard Erosion and Sediment Control Ordinance [VESCO] permits were not developed nor required at the time of these vineyard installations.



Figure 3
Stream Class Designations and Survey Areas



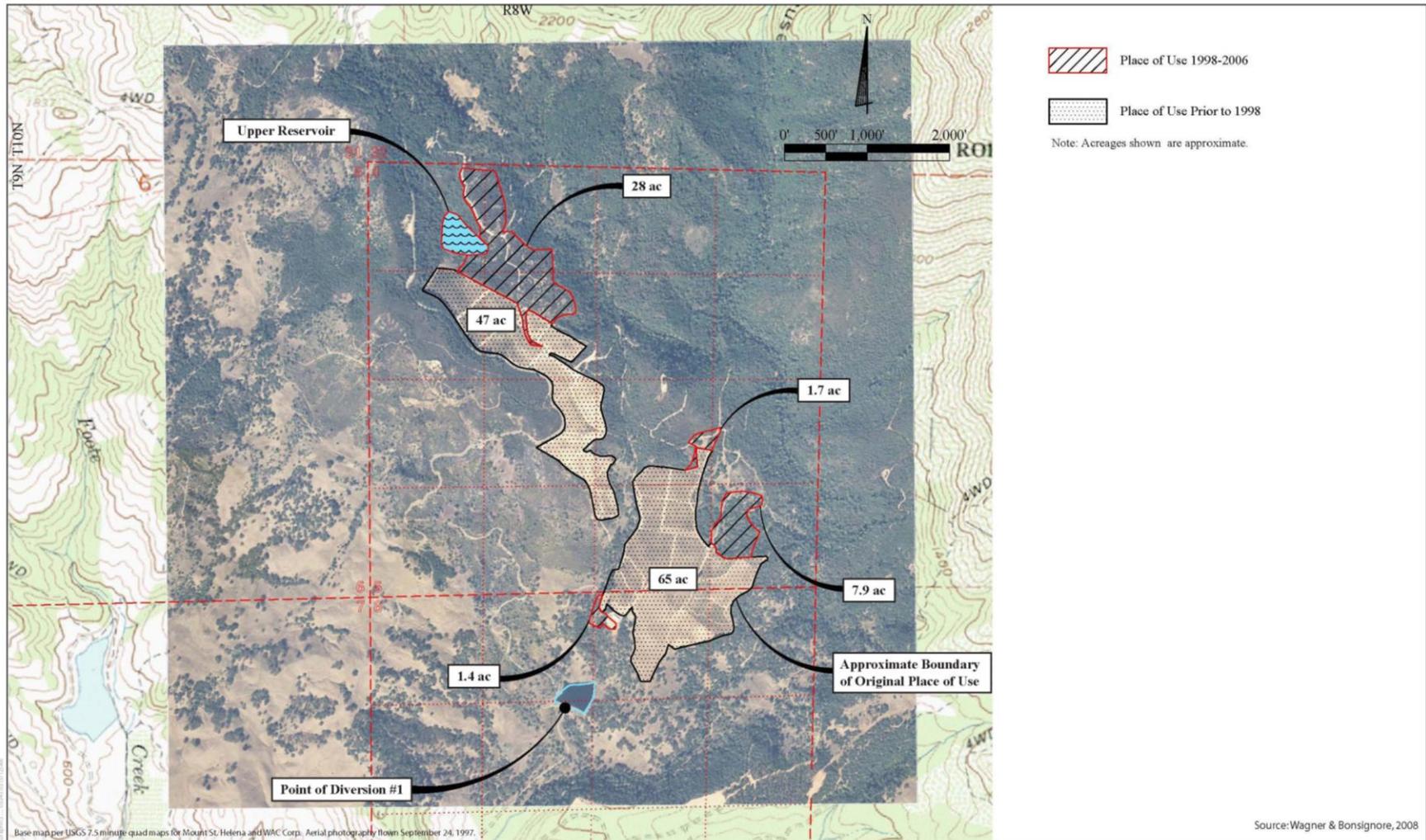


Figure 4
Map Showing Place of Use Pre and Post Application

A 4-inch-diameter low-level outlet conduit passes through the foundation of the embankment at the lower reservoir. A pump on the downstream end of the outlet conduit and approximately 6,000 feet of the 4-inch-diameter transmission pipeline also existed prior to the filing of Application 30745 as part of the irrigation system for the vineyard.

The upper reservoir, which is offstream, was constructed in 2001 (with the appropriate Sonoma County grading permit as well as a VESCO application and permit) in an area that had been cleared and graded by the previous owner following a wildfire that swept through the region in 1978. In addition to receiving water pumped from POD 1, the upper reservoir is filled from non-jurisdictional sources (primarily sheetflow and direct precipitation³).

As shown in Table 2, the baseline condition for Application 30745 consists of the 36.5-af lower reservoir, the pump and transmission pipeline, and 112 gross acres of vineyard. The following project elements will be evaluated under the California Environmental Quality Act (CEQA): construction of the upper reservoir; conversion of 39 acres to vineyard (i.e., clearing of regrowth and planting and irrigation installation associated with the 32 acres; and clearing, grading, planting, and irrigation installation associated with the 7 acres), and seasonal diversion to storage of up to 85 af⁴ of water. The diversion to storage of 85 af of water from the unnamed stream was evaluated in a water availability analysis and other associated hydrologic analyses (Wagner & Bonsignore 2008a, 2008b) and a watershed-wide depth and velocity modeling effort (ICF Jones & Stokes 2010), and is discussed in this CEQA document (refer to the Hydrology and Water Quality section below).

Table 2. CEQA Baseline Conditions and Project Components and Associated Dates

Existing Project Components at Baseline	CEQA Baseline Date	Project Components and Associated Dates
36.5-af lower reservoir, including pump and transmission pipeline	August 7, 1998	Construction of the upper reservoir (2001)
		Conversion of 39 acres to vineyard (32 acres planted between August 7, 1998 and July 21, 2000; 7 acres of vineyard cleared, graded, and prepared in 2004 and planted in 2005)
112 gross acres of vineyard		Seasonal diversion to storage of up to 85 af of water (since 2001)

³ Proof of non-jurisdiction was established in 2002 during a site visit when the State Water Board investigated a complaint by the Community Clean Water Institute alleging illegal diversion. The investigation was conducted by the State Water Board's Laura Vasquez (Vasquez 2002).

⁴ The lower reservoir (36.5 af) existed prior to the CEQA baseline date and was used to irrigate 112 acres of vineyard. The diversion and use of the 36.5 acre-feet occurred prior to the CEQA baseline date.

Regulatory Environment

The State Water Board is the lead agency under CEQA with the primary authority for project approval. In addition, the following responsible, trustee, and federal agencies may have jurisdiction over some or the entire proposed project:

- California Department of Fish and Game (DFG)—Lake and Streambed Alteration Agreement, California Endangered Species Act (CESA) compliance;
- California Regional Water Quality Control Board (RWQCB) (San Francisco Bay Region)—Clean Water Act (CWA) Section 401 Water Quality Certification, General Construction National Pollutant Discharge Elimination System (NPDES) Permit;
- USFWS—Federal Endangered Species Act (ESA) Compliance;
- U.S. Army Corps of Engineers (USACE)— Clean Water Act Section 404 Permit; and
- NMFS—Federal ESA Compliance.

II. Environmental Impacts

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

<input checked="" type="checkbox"/> Geological Problems/Soils	<input type="checkbox"/> Noise	<input type="checkbox"/> Public Services
<input type="checkbox"/> Air Quality	<input type="checkbox"/> Land Use and Planning	<input type="checkbox"/> Utilities and Service Systems
<input type="checkbox"/> Greenhouse Gases/Global Warming	<input type="checkbox"/> Energy and Mineral Resources	<input type="checkbox"/> Aesthetics
<input checked="" type="checkbox"/> Hydrology/Water Quality	<input type="checkbox"/> Hazards	<input checked="" type="checkbox"/> Cultural Resources
<input checked="" type="checkbox"/> Biological Resources	<input type="checkbox"/> Population and Housing	<input type="checkbox"/> Recreation
<input type="checkbox"/> Agriculture and Forest Resources	<input type="checkbox"/> Transportation/Circulation	<input checked="" type="checkbox"/> Mandatory Findings of Significance

1. GEOLOGY and SOILS

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) 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? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Sonoma County is located in the Coast Ranges geomorphic province. The Coast Ranges geomorphic province includes many separate ranges; coalescing mountain masses; and several major structural valleys of sedimentary, igneous, and metamorphic origin. The northern Coast Range extends from the California/Oregon border south to the San Francisco Bay Area. On average, it extends from the coastline to 50–75 miles inland. Typical tectonic, sedimentary, and igneous processes of the Circum-Pacific orogenic belt have influenced the evolution of the northern Coast Range. The Coast Ranges geomorphic province is characterized by the presence of two entirely different

core complexes, one being a Jurassic-Cretaceous eugeosynclinal assemblage (the Franciscan rocks) and the other consisting of early Cretaceous granitic intrusives and older metamorphic rocks. The two unrelated, incompatible core complexes lie side by side, separated from each other by faults. A large sequence of Cretaceous and Cenozoic clastic deposits covers large parts of the province. The rocks in the province are characterized by many folds, thrust faults, reverse faults, and strike-slip faults that have developed as a consequence of Cenozoic deformation (Page 1966).

The proposed project area (and vicinity) is mapped by the California Department of Conservation, Division of Mines and Geology (Wagner and Bortugno 1982), now called the California Geological Survey, as having various rock assemblages that are based on topographic position in the immediate watershed. These include the Sonoma Volcanics (basalt, andesite, rhyolite, tuff, and other pyroclastic rocks), which generally are located east of the proposed project area and are associated with Mount Saint Helena; some minor outcrops of ultramafic rocks (peridotite), which are associated with pre-Quaternary faults that trend to the northwest; some older landslide deposits to the northwest of the proposed project area; and Quaternary alluvium, which is found at the western portion of the proposed project area in the lower elevation areas. The majority of the project area, however, is composed of the Franciscan Complex, a *mélange* of sandstone, shale, conglomerate, chert, greenstone, and metagraywacke. These rock formations are expected to be locally stable.

The soil association in the proposed project area is mapped by the Soil Conservation Service (now called the Natural Resources Conservation Service [NRCS]) as the Kidd-Forward-Cohasset soil association. In general, these soils are well-drained to somewhat excessively drained, moderately sloping to very steep gravelly and stony loams. The dominant soil map unit in the proposed project area is the Kidd Gravelly Loam, 9% to 50% slopes. Runoff is medium to rapid, and the erosion hazard is moderate to high. Soils are not expansive (Miller 1972).

Sonoma County faults are part of the San Andreas fault system that extends along the California coast. The last major earthquake in Sonoma County was a 5.7 magnitude event on the Healdsburg fault in Santa Rosa in 1969. Analysis of seismic data indicates that 7.5 to 8.5 magnitude earthquakes can be expected for the San Andreas and the Healdsburg-Rodgers Creek faults, respectively. Earthquakes of magnitude 8.0 or more on the San Andreas fault can be expected every 50 to 200 years (Sonoma County 2008).

The proposed project area is not identified as being located in an Alquist-Priolo Earthquake Fault Zone (California Division of Mines and Geology 2001; California Geological Survey 2007a, 2010; Hart and Bryant 1997; International Conference of Building Officials 1997; Jennings and Bryant 2010; Sonoma County 2008; U.S. Geological Survey 2009). However, several early Quaternary and pre-Quaternary faults are located within an approximate 20-mile radius of the proposed project area⁵. The

⁵ Based on fault activity mapping, a pre-Quaternary fault runs south to north through the Home Ranch property (California Geological Survey 2010; Jennings and Bryant 2010).

Maacama Fault Zone is the closest active fault zone to the proposed project area. It is located within an Alquist-Priolo Earthquake Fault Zone, but is approximately 10 miles away from the proposed project area.

Ground shaking from earthquakes can cause the most damage of any geologic hazard. The amount of ground shaking depends on the magnitude of the earthquake, the distance from the epicenter, and the type of earth materials in between. Ground shaking similar to that which took place in Santa Rosa during the 1969 earthquake can be expected somewhere in Sonoma County once every 20 to 30 years (Sonoma County 2008).

Based on a probabilistic seismic hazard map that depicts the peak horizontal ground acceleration values exceeded at a 10% probability in 50 years (Cao et al. 2003; California Geological Survey 2007b), the probabilistic peak horizontal ground acceleration values for the proposed project area range from 0.4 to 0.5g, where one g equals the force of gravity. This indicates that the ground-shaking hazard is medium. Furthermore, the proposed project area is mapped by Sonoma County as possessing a moderate to very strong ground-shaking severity if a magnitude 7.1 earthquake were to occur nearby (Sonoma County 2008).

Liquefaction is a phenomenon in which the strength and stiffness of unconsolidated sediments are reduced by earthquake shaking or other rapid loading. Poorly consolidated, water-saturated fine sands and silts having low plasticity and located within 50 feet of the ground surface typically are considered to be the most susceptible to liquefaction. Soils and sediments that are not water-saturated and that consist of coarser or finer materials are generally less susceptible to liquefaction (California Division of Mines and Geology 1997). Soils in the proposed project area are well above the water table and consist of loam and coarser substrate, thus rendering them not highly susceptible to liquefaction. Additionally, liquefaction susceptibility in the proposed project area is mapped as low (Sonoma County 2008).

In general, land uses vary in their sensitivity to geologic hazards. Agriculture (including vineyard operations) and timber management are considered appropriate in areas subject to geologic hazards because such uses require few occupied structures (Sonoma County 2008).

Findings

- a i. Would the project expose people or structures to 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 area would not be subject to fault rupture because of its distance from active faults. Furthermore, no habitable structures were built or would be built as part of the proposed project, and the proposed project itself would not increase the present hazard of fault rupture. Accordingly, there is 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?**

The probabilistic peak horizontal ground acceleration values for the proposed project area range from 0.4 to 0.5g, indicating that the ground-shaking hazard is medium. However, no habitable structures were built or would be built as part of the proposed project, and the proposed project itself would not increase the present hazard of ground shaking. Accordingly, there is 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?**

Soils in the proposed project area are well above the water table and consist of loam and coarser substrate, thus rendering them not highly susceptible to liquefaction. Additionally, liquefaction susceptibility in the proposed project area is mapped as low (Sonoma County 2008). Furthermore, no habitable structures were built or would be built as part of the proposed project. Accordingly, there is 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?**

No habitable structures were built or would be built as part of the proposed project. Accordingly, there is no impact.

- 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?**

The majority of the project area is composed of the Franciscan Complex, a mélange of sandstone, shale, conglomerate, chert, greenstone, and metagraywacke. These rock formations are expected to be locally stable. Accordingly, there is no impact associated with an unstable geologic unit.

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

The dominant soil map unit in the proposed project area is the Kidd Gravelly Loam, 9% to 50% slopes. Soils are not described as expansive (Miller 1972), due to their low clay content. Accordingly, there is no impact.

- 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 project. Accordingly, there is no impact associated with 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.

Soil Erosion Impact Discussion and Findings (Impact b)

b. Would the project result in substantial soil erosion or the loss of topsoil?

Thirty-two acres were planted in a previously cleared and graded area between August 7, 1998, and July 21, 2000 (Figure 4). VESCO permits were not developed or required at the time of these vineyard installations⁶. An additional 7 acres of vineyard were cleared, graded, and prepared in 2004 and planted in 2005 (in accordance with a Sonoma County grading permit and a Sonoma County VESCO application and permit⁷).

The upper reservoir was constructed in 2001 (with the appropriate Sonoma County grading permit as well as a Sonoma County VESCO application and permit) in an area that had been cleared and graded by the previous owner following a wildfire that swept through the region in 1978. Prior to construction of the upper reservoir, a portion of the upper reservoir footprint had been planted with grapes (as part of the development of the 32 acres).

Construction of the upper reservoir and conversion of 7 acres to vineyard (including the installation of the irrigation system and other water facilities) required temporary soil disturbance. The potential existed for the mobilization of sediment during construction and after construction from unstabilized areas. However, compliance with the Sonoma County VESCO (Sonoma County Code, Chapter 30, Article V, Ord. No. 5216 § 2, 2000) permit requirements presumably ensured that no geologic or soil resources on the 7-acre parcel or the upper reservoir site were significantly affected by the proposed project.

The Sonoma County Permit and Resource Management Department (PRMD) requires grading permits for projects that involve more than 50 cubic yards of fill on any lot or projects that include an excavation or fill that alters or obstructs a drainage course. Additionally, the Sonoma County Agricultural Commission's Agricultural Division administers the Sonoma County VESCO.

The purpose of the ordinance is to safeguard public health, safety, and welfare; minimize erosion and sedimentation in connection with vineyard planting and replanting in the county; protect the lands, streams, and riparian habitat in the county; and ensure the long-term economic viability of the county's viticulture resources.

Growers planting new vineyards or replanting existing vineyards are required to use recognized conservation practices and best management practices (BMPs), and provide for riparian setbacks to protect the environment and watersheds of the county.

⁶ Impacts on geologic or soil resources in these 32 acres are not discussed further herein. There are no blue-line streams adjacent to the 32 acres and removal of vegetation regrowth and planting was limited to areas with moderate slopes, thus minimizing erosion potential.

⁷ The Applicant obtained a VESCO permit in late 2004 from the Sonoma County Agricultural Commissioner and the Sonoma County Permit and Resource Management Department (PRMD). The 7-acre parcel was prepared in 2004 and planted in 2005. The irrigation system was completed in 2005.

The vineyard development included Level II plantings⁸. The ordinance defines them as:

- Level II vineyard planting means any vineyard planting on contiguous new vineyard land under common ownership with a significant drainage area that has similar slope characteristics and has either highly erodible soils and an average slope of ten percent to not more than 15 percent, or less erodible soils and an average slope of 15 percent to not more than 30 percent.

General requirements for authorized vineyard plantings include:

- Any person undertaking a Level II or III vineyard planting shall obtain a certified erosion and sediment control plan for the vineyard planting, notify the agricultural commission of the vineyard planting and request that the agricultural commissioner review the vineyard planting and the certified erosion and sediment control plan for the vineyard planting as required under the Ordinance, and undertake the vineyard planting in accordance with the requirements of the Ordinance and the certified erosion and sediment control plan for the vineyard planting. The vineyard planting shall establish and maintain a riparian setback for any designated stream on the vineyard site of either fifty feet from the top of the bank, or, if applicable, the distance specified in the Riparian Corridors section (26-66-030), whichever is greater.

In brief, the Applicant conducted the following steps to prevent soil erosion or slope failure on the 7-acre parcel.

- Prior to the start of construction or diversion or use of water, the Applicant filed a notice of vineyard planting with the Sonoma County agricultural commissioner. The notice conformed to applicable provisions of the Sonoma County Vineyard Erosion and Sediment Control Ordinance (Ord. No. 5216 §§ 2, 2000). The notice included:
 - 1) maps, plans, drawings, calculations, photographs, and other information as was necessary or required by the agricultural commissioner to verify that the vineyard planting qualifies as a Level II authorized vineyard planting; and
 - 2) an erosion and sediment control plan, certified pursuant to Section 30-74 of the Sonoma County VESCO, for the vineyard planting.

The Applicant has submitted copies of the aforementioned permits to the Division of Water Rights to verify that the project was constructed in compliance with Sonoma County requirements in place at the time of development. Additionally, the Applicant will comply with the following permit term if necessary:

- For any future modification of the diversion, storage and conveyance facilities, or of the place of use, for which compliance with the Sonoma County Grading, Drainage, Vineyard and Orchard Site Development Ordinance⁹ (Ordinance) is

⁸ The construction of the upper reservoir included Level I removal of grape vines. The removal of grape vines prompted the Applicant to obtain a Sonoma County VESCO application and permit.

⁹ Sonoma County's VESCO has recently been superseded by this new ordinance in January of 2009. See http://www.sonoma-county.org/agcomm/pdf/review_handout_09.pdf for additional information.

required, Permittee shall submit, prior to licensing, evidence to the Deputy Director for Water Rights verifying that the project was constructed in compliance with the requirements of the Sonoma County Ordinance.

In brief, compliance with the measures incorporated within an erosion and sedimentation control plan as required by Sonoma County and compliance with conditions of the Sonoma County grading permit and the requirements of the Sonoma County VESCO reduced potential soil erosion impacts associated with the 7-acre parcel and associated with any future modifications as specified in the above permit term to a less-than-significant level¹⁰.

¹⁰ Site inspections conducted by the Sonoma County PRMD during and after the construction of the upper reservoir and during and after the development of the 7-acre parcel indicated no violations and more than adequate short- and long-term BMP implementation.

2. AIR QUALITY

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Background

The proposed project is located within the North Coast Air Basin, falling under the jurisdiction of the Northern Sonoma County Air Pollution Control District. The climate of the region is mediterranean in character, with mild, rainy winter weather from November through April, and warm to hot, sub-humid weather from May through October. The North Coast Air Basin generally is not affected by regionally high pollution emissions.

Air quality in the area is a function of the criteria air pollutants emitted locally, the existing regional ambient air quality, and the meteorological and topographic factors that influence the intrusion of pollutants into the area from sources outside the immediate vicinity.

Criteria Pollutants

Ozone

Ozone (O₃) is not emitted directly into the atmosphere but is a secondary air pollutant produced in the atmosphere. Through a complex series of photochemical reactions, in the presence of strong sunlight and O₃ precursors (nitrogen oxides [NO_x] and reactive organic gases [ROG]), O₃ is created. Motor vehicles are a major source of O₃ precursors. O₃ causes eye and respiratory irritation, reduces resistance to lung infection, and may aggravate pulmonary conditions in persons with lung disease.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, invisible gas usually formed as the result of incomplete combustion of organic substances and is primarily a winter pollution problem. CO concentrations are influenced by the spatial and temporal distributions of vehicular traffic, wind speed, and atmospheric mixing. High levels of CO can impair the transport of oxygen in the bloodstream, thereby aggravating cardiovascular disease and causing fatigue, headaches, and dizziness.

Respirable Particulate Matter

PM10 consists of particulate matter 10 microns (1 micron is 1 one-millionth of a meter) or less in diameter, which can be inhaled. Relatively small particles of certain substances (e.g., sulfates, nitrates) can cause lung damage directly or can contain adsorbed gases (e.g., chlorine, ammonia) that may be injurious to health. Primary sources of PM10 emissions in northern Sonoma County are entrained road dust and construction and demolition activities. Burning of wood in residential wood stoves and fireplaces and open agricultural burning are other sources of PM10. The amount of particulate matter and PM10 generated is dependent on the soil type and the soil moisture content.

Regulatory Setting

Regulation of air quality is achieved through both federal and state ambient air quality standards and emission limits for individual sources of air pollutants.

Federal

The 1977 federal Clean Air Act (CAA) required the United States Environmental Protection Agency (EPA) to identify National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for the six criteria air pollutants, O₃, CO, NO_x, sulfur dioxide (SO₂), PM10, and lead. The EPA publishes standards for these pollutants, listed in Table 3.

Pursuant to the 1990 CAA Amendments, the EPA has classified air basins (or portions thereof) as either attainment or non-attainment for each criteria air pollutant, based on whether the NAAQS have been achieved. Northern Sonoma County, located in the North Coast Air Basin, currently is designated as either attainment or unclassified for PM10 (attainment), PM2.5 (unclassified), O₃ (attainment), CO (unclassified), NO_x (attainment), SO₂ (attainment), and lead (attainment) (California Air Resources Board 2011a).

Table 3. State and National Ambient Air Quality Standards

Pollutant	Averaging Time	SAAQS	NAAQS
Ozone	1 hour	0.09 ppm	0.12 ppm
	8 hour	0.070 ppm	0.075 ppm
Carbon Monoxide	1 hour	20 ppm	35 ppm
	8 hour	9.0 ppm	9.0 ppm
Nitrogen Dioxide	1 hour	0.18 ppm	100 ppb
	Annual	0.030 ppm	53 ppb
Sulfur Dioxide	1 hour	0.25 ppm	75 ppb
	3 hour	N/A	0.5 ppm
	24 hour	0.04 ppm	0.14 ppm
	Annual	N/A	0.03 ppm
Respirable Particulate Matter	24 hour	50 µg/m ³	150 µg/m ³
	Annual	20 µg/m ³	N/A
Lead	30 day	1.5 µg/m ³	N/A
	Rolling 3-Month Average	N/A	0.15 µg/m ³
	Calendar Quarter (Quarterly Average)	N/A	1.5 µg/m ³

Notes:

SAAQS (i.e., California standards) for ozone, carbon monoxide, sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and respirable particulate matter are values that are not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

NAAQS (i.e., national standards), other than ozone, particulate matter, and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard.

ppm = parts per million by volume; ppb = parts per billion by volume; µg/m³ = micrograms per cubic meter of air; N/A: Not Applicable.

Source: California Air Resources Board 2009; U.S. Environmental Protection Agency 2010.

State

The California Air Resources Board regulates mobile emissions sources and oversees the activities of county Air Pollution Control Districts and regional Air Quality Management Districts. The California Air Resources Board regulates local air quality indirectly by State Ambient Air Quality Standards (SAAQS) and vehicle emission standards by conducting research activities and through planning and coordinating activities.

California has adopted ambient standards that are more stringent than the federal standards for the criteria air pollutants. These standards are shown in Table 3. Under the California Clean Air Act, patterned after the federal CAA, areas have been designated as *attainment* or *nonattainment* with respect to SAAQS.

Existing Air Quality Conditions

The California Air Resources Board maintains several ambient air quality monitoring stations in the Northern Sonoma County Air Pollution Control District that provide information on the average concentrations of criteria air pollutants in the region. The Cloverdale monitoring station is located closest to the proposed project area. The second closest monitoring station is at the Healdsburg Municipal Airport. However, it should be noted that the monitoring stations are located in urban areas while the proposed project area is located in a rural area, more than 1,000 feet above Cloverdale. Table 4 summarizes ambient air quality monitoring data from this location and compares ambient air pollutant concentrations of O₃ and PM₁₀ to SAAQS and NAAQS.

Table 4. Ambient Air Quality Monitoring Data

Pollutant	2006	2007	2008	2009
*Ozone (O₃)				
Maximum 1-hour concentration (ppm)	0.070	0.070	0.080	0.070
Number of days Standard exceeded				
SAAQS (1-hour) > 0.09 ppm	0	0	0	0
NAAQS (1-hour) > 0.12 ppm	0	0	0	0
**Particulate Matter (PM₁₀)				
Maximum 24-hour concentration (µg/m ³)	30.0	29.0	81.0	24.0
Number of days Standard exceeded				
SAAQS (24-hour) > 50 µg/m ³	0	0	1	0
NAAQS (24-hour) > 150 µg/m ³	0	0	0	0

Notes:

*Data is from the Healdsburg Municipal Airport monitoring station.

**Data is from the Cloverdale monitoring station.

ppm = parts per million; µg/m³ = micrograms per cubic meter.

Source: California Air Resources Board 2011b.

Findings

The Northern Sonoma County Air Pollution Control District Rule Book (specifically Regulation 1) contains guidelines for assessing the air quality impacts of proposed projects, as well as prohibitions. The Northern Sonoma County Air Pollution Control District's approach to assessment of construction-related air quality impacts is to emphasize the implementation of effective and comprehensive control measures rather than provide detailed quantification of emissions (California Air Resources Board 2011c).

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

The project did not nor would not conflict with or obstruct implementation of any applicable air quality plan. As such, there is no impact.

b. *Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

The project did not nor would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. As such, there is no impact.

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

Routine continued compliance with permit regulations from the Sonoma County Agricultural Commissioner's Office for the use of soil stabilizers, pesticides, herbicides, and other regulated chemicals continues to render exposure of sensitive receptors to pollutants a less-than-significant impact.

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

Air quality impacts associated with the construction of the upper reservoir and conversion of 39 acres to vineyard were limited to those resulting from short-term construction activities. Construction-related emissions most likely included exhaust from construction equipment and fugitive dust from trenching during the installation of the irrigation system, movement of vehicles, and wind erosion of exposed soil during vineyard installation. However, as the proposed project area had historically operated as a vineyard, no additional workers or vehicles (which are the primary sources of operational greenhouse gas [GHG] emissions) were required. Furthermore, the Applicant minimized dust exposure on a regular basis through watering efforts. As such, impacts on air quality associated with construction of the upper reservoir and conversion of 39 acres to vineyard were less than significant.

e. *Would the project create objectionable odors affecting a substantial number of people?*

Application of agricultural chemicals during vineyard operation continues to have the potential to result in objectionable odors. Continued compliance with requirements of the Sonoma County Agricultural Commissioner continues to minimize nuisance odors to a less-than-significant level.

3. GREENHOUSE GASES/GLOBAL WARMING

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

On September 27, 2006, the State of California adopted Assembly Bill 32 (California Global Warming Solutions Act of 2006). The bill requires the State Air Resources Board to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990 to be achieved by 2020. GHGs include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The State of California Air Resources Board approved 427 million metric tons of carbon dioxide equivalents (MMTCO₂e) as the statewide GHG emission limit, which is equivalent to the 1990 emissions level. Carbon dioxide equivalent means the amount of carbon dioxide by weight that would produce the same climate change impact as a given weight of another GHG. Northern Sonoma County does not exceed the federal 8-hour ozone standard.

GHGs, including carbon dioxide, methane, and nitrous oxide, serve to regulate the earth's surface temperature, keeping the earth's average temperature close to 60° Fahrenheit (F). GHGs occur both naturally and as a result of human-made activities (anthropogenic sources).

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Over the past 200 years, anthropogenic sources, including the burning of fossil fuels (such as coal and oil) and deforestation, have caused the concentrations of heat-trapping GHGs to increase significantly in the atmosphere (U.S. Environmental Protection Agency 2008a).

In the U.S., energy-related activities account for three quarters of human-generated GHG emissions, mostly in the form of carbon dioxide emissions from burning fossil fuels. More than half the energy-related emissions come from large stationary sources such as power plants, while about a third comes from transportation. Industrial processes (such as the production of cement, steel, and aluminum), agriculture,

forestry, other land use, and waste management are also important sources of GHG emissions in the United States. (U.S. Environmental Protection Agency 2008b.)

If GHGs continue to increase, climate models predict that the average temperature at the earth's surface could increase from 2.5 to 10.4°F above 1990 levels by the end of this century. Scientists are certain that human activities are changing the composition of the atmosphere, and that increasing the concentration of GHGs will change the planet's climate. (U.S. Environmental Protection Agency 2008b.)

Rising average temperatures already are affecting the environment. In California during the last 50 years, winter and spring temperatures have been warmer, spring snow levels in lower and mid-elevation mountains have dropped, and snowpack has been melting 1 to 4 weeks earlier. Climate change projections through 2100 indicate an increase in the number of severe heat days, an increase in poor air quality days, and a declining Sierra snowpack. Such changes could adversely affect health, water supplies, hydropower, agriculture, and recreation in California. (California Climate Change Center 2009.)

Regulatory Setting

The State of California has enacted legislative measures to implement policies and regulatory actions to quantify and reduce GHGs. The most prominent of these is AB 32, Nunez (2006)—the California Global Warming Solutions Act of 2006. AB 32 declares that global warming is a serious threat to the public health, economic well-being, natural resources, and environment of California. AB 32 makes the California Air Resources Board responsible for monitoring and reducing GHG emissions and requires it to:

1. Establish (by January 1, 2008) a statewide GHG emissions cap for 2020, based on 1990 emissions.
2. Adopt a plan by January 1, 2009 showing how emissions reductions will be achieved from significant GHG sources via regulations, market mechanisms, and other actions.
3. Adopt a list of discrete early action measures by July 1, 2007, that can be implemented before January 1, 2010, and beyond. The Early Action List required by the California Global Warming Solutions Act of 2006 contains nine discrete early action items. These actions are primarily transportation-related, with commercial actions included as well. They are intended to target the most significant sources of GHGs.

On April 13, 2009, the Governor's Office of Planning and Research submitted to the Secretary for Natural Resources its proposed GHG emission amendments to the State CEQA Guidelines, as required by SB 97 (Chapter 185, 2007). Those amendments were adopted on December 30, 2009. The amendments set target GHG emission reductions for all metropolitan planning organizations (MPO). Each MPO must design a Sustainable Communities Strategy or alternative strategy as part of its regional transportation plan to achieve 2020 and 2035 GHG emission targets set by the Air Resources Board for each region. Local agencies not included within an MPO are

exempt from the GHG emission targets, but they must address the State CEQA Guidelines requirement contained in the Initial Study checklist for projects that they are considering.

The local agency with jurisdiction over air quality and GHG regulations is the Northern Sonoma County Air Pollution Control District, which currently does not have adopted GHG thresholds of significance for CEQA review projects. The nearest and most applicable local agency, the Bay Area Air Quality Management District, recently adopted¹¹ the approach to the determination of significance of GHG emissions based on the GHG significance threshold of 1,100 metric tons CO₂ per year for projects that are not stationary sources, such as the proposed project. However, as stated on their website, it is the Bay Area Air Quality Management District's policy that the adopted thresholds apply to projects for which environmental analysis begins on or after the applicable effective date. As discussed above in the Project Background and California Environmental Quality Act Baseline Conditions section, August 7, 1998, is considered the CEQA baseline date and the date that environmental review for the proposed project began. Accordingly, the proposed project is not subject to the thresholds identified in the recently adopted 2010 Bay Area Air Quality Management District CEQA guidelines.

Findings

a. *Would the project generate greenhouse gas emission, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?*

The construction of the upper reservoir and conversion of 39 acres to vineyard included operational sources of GHG emissions such as vehicle travel, energy use, and water transport. However, as the proposed project area historically had operated as a vineyard, no additional workers or vehicles (which are the primary sources of operational GHG emissions) were required. Increases in energy use and water transport were minimal as there is little electricity used on site and water sources are nearby. This impact is considered less than significant.

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

The proposed project did not and would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. Accordingly, there is no impact.

¹¹ The Bay Area Air Quality Management District CEQA guidelines were adopted on June 2, 2010, and were effective as of the adoption date.

4. HYDROLOGY & WATER QUALITY

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site, including through alteration of the course of a stream or river, or substantially increase the rate or volume of surface runoff in a manner that would:				
i) result in flooding on- or off-site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) create or contribute runoff water that would exceed the capacity of existing or planned stormwater discharge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) provide substantial additional sources of polluted runoff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Place housing or other structures which would impede or re-direct flood flows within a 100-yr. flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Expose people or structures to a significant risk of loss, injury, or death involving flooding:				
i) as a result of the failure of a dam or levee?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) from inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Would the change in the 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) a significant reduction in water supply, either on an annual or seasonal basis, to senior water right holders downstream of the diversion?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
iii) a significant reduction in the available aquatic habitat or riparian habitat for native species of plants and animals?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) a significant change in seasonal water temperatures due to changes in the patterns of water flow in the stream?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) a substantial increase or threat from invasive, non-native plants and wildlife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impacts a–f Findings

a. *Would the project violate any water quality standards or waste discharge requirements?*

During the construction of the upper reservoir and conversion of 7 acres to vineyard, construction activities had the potential to introduce sediment into watercourses. Water quality standards and/or waste discharge requirements were not exceeded because the proposed project complied with the Sonoma County VESCO (Sonoma County Code, Chapter 30, Article V, Ord. No. 5216 § 2, 2000) permit requirement. Refer to the Geology and Soils section above for additional information. This impact is considered less than significant.

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

The proposed project did not and would not substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. The vineyard is already 100% irrigated with reservoir water. As such, there is no impact.

c. *Would the project substantially alter the existing drainage pattern of the site, including through alteration of the course of a stream or river, or substantially increase the rate or volume of surface runoff in a manner that would: i) result in flooding on- or off-site; ii) create or contribute runoff water that would exceed the capacity of existing or planned stormwater discharge; iii) provide substantial additional sources of polluted runoff; or iv) result in substantial erosion or siltation on- or off-site?*

During the construction of the upper reservoir and conversion of 39 acres to vineyard, no topography modifications were necessary—as such, existing drainage patterns were maintained. Water quality objectives were met with appropriate erosion controls, and the proposed project did not alter the overall drainage pattern of the area. No substantial additional sources of polluted runoff were generated. As such, there is no

impact associated with the prior construction of the upper reservoir and conversion of 39 acres to vineyard.

d. *Would the project otherwise substantially degrade water quality?*

The proposed project did not or will not otherwise substantially degrade water quality. Accordingly there is no impact.

e. *Would the project place housing or other structures which would impede or re-direct flood flows within a 100-yr. flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

The proposed project did not or will not place housing or other structures that would impede or re-direct flood flows within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. As such, there is no impact.

f. *Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding: i) as a result of the failure of a dam or levee?; or ii) from inundation by seiche, tsunami, or mudflow?*

The proposed project did not or will not expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of the failure of a dam or levee or from inundation by seiche, tsunami, or mudflow. As such, there is no impact.

California Department of Fish and Game and National Marine Fisheries Service Draft Guidelines

In 2002, DFG and NMFS developed the DFG-NMFS Draft Guidelines (California Department of Fish and Game and National Marine Fisheries Service 2002). The DFG-NMFS Draft Guidelines were recommended for use by permitting agencies (including the Division), planning agencies, and water resources development interests when evaluating proposals to divert and use water from northern California coastal streams. The DFG-NMFS Draft Guidelines apply to projects located in the geographic area of Sonoma, Napa, Mendocino, and Marin Counties, and portions of Humboldt County. The proposed project is within the geographic limits of the DFG-NMFS Draft Guidelines.

The DFG-NMFS Draft Guidelines recommend that terms and conditions be included in new water right permits for small diversions to protect fishery resources in the absence of site-specific biologic and hydrologic assessments. The DFG-NMFS Draft Guidelines recommend limiting new water right permits to diversions during the winter period (December 15 through March 31) when streamflows are generally high. The project's proposed diversion season is within the season recommended by the DFG-NMFS Draft Guidelines.

The DFG-NMFS Draft Guidelines provide a process for assessing the potential for cumulative impacts of multiple diversion projects on downstream fisheries habitat. This process includes calculating the Cumulative Flow Impairment Index (CFII). The CFII

calculation, which is essentially a seasonal volumetric comparison of the face value of water rights of record versus estimated unimpaired flow, is used to determine whether more detailed studies are required to assess the cumulative effects of existing and pending projects in a watershed of interest. The DFG-NMFS Draft Guidelines also recommend a bypass flow that adequately protects salmonids and aquatic resources downstream from POD 1. Specifically, a bypass not less than the February Median Flow (FMF) at POD 1 is recommended absent a site-specific study to determine a protective bypass flow.

Before the Division can issue a water right permit, it must find that there is unappropriated water available to supply the Applicant. In determining the amount of water available for diversion, the Division must take into account, whenever it is in the public interest, the amount of water required to maintain instream beneficial uses such as fish and wildlife resources. An assessment of the project's potential impacts on instream biological resources is provided in the Biological Resources section of this document.

Policy for Maintaining Instream Flows in Northern California Coastal Streams

Pending Water Right Application 30745, located in Sonoma County, is also subject to the *Policy for Maintaining Instream Flows in Northern California Coastal Streams* (Policy) adopted on May 4, 2010, and became effective September 28, 2010. The Policy establishes principles and guidelines for maintaining instream flows for the protection of fishery resources. Provided certain conditions are met, the Policy allows for continued processing of pending applications under the DFG-NMFS Draft Guidelines. The DFG-NMFS Draft Guidelines provide standard recommended protective terms and conditions to be followed in the absence of site-specific, biological, and hydrologic assessments.

Section 3.3.1 of the Policy states, "if prior to the adoption date of this policy, the applicant has submitted a water availability analysis (WAA) and an analysis of cumulative flow-related impacts the State Water Board will process the WAA aspects of the application using the Draft Guidelines. Prior to processing the application using the Draft Guidelines the State Water Board must determine that the project is consistent with the recommendations contained therein pertaining to diversion season, onstream dams, minimum bypass flows, protection of the natural hydrograph and avoidance of cumulative impacts. Projects in the process of implementing site-specific study plan(s) that have been approved by DFG, NMFS, and the State Water Board meet this requirement" (State Water Resources Control Board 2010).

The WAA report (Wagner & Bonsignore 2008a) for Application 30745 was submitted on March 20, 2008. Division staff agreed with the methodology used to estimate the unimpaired flow volume, watershed demand, February Median Flow, and the Cumulative Flow Impairment Index (CFII) calculations in the report. Additionally, the proposed project has completed several site-specific studies that were approved by DFG, NMFS, and the Division (Wagner & Bonsignore 2008a, Wagner & Bonsignore 2008b, ICF Jones & Stokes 2008, ICF Jones & Stokes 2009, and ICF Jones & Stokes

2010). As discussed below, the project, with specific modifications and mitigation measures incorporated as a result of the agency consultations and site-specific studies, appears to be consistent with the DFG-NMFS Draft Guidelines' recommendations.

Impact g Findings

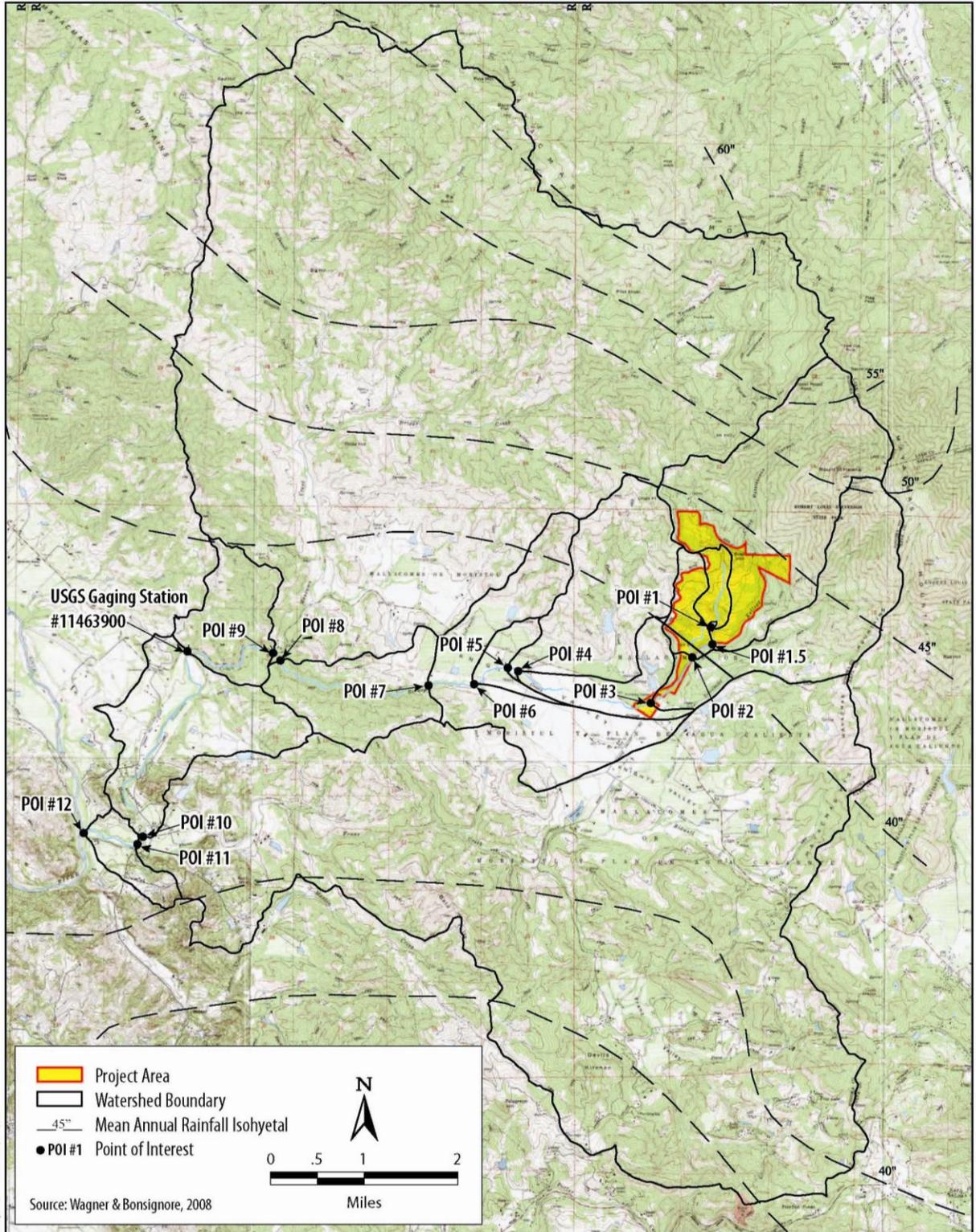
g i and ii. ***Would the change in the water volume and/or the pattern of seasonal flows in the affected watercourse result in: i) a significant cumulative reduction in the water supply downstream of the diversion?; or ii) a significant reduction in water supply, either on an annual or seasonal basis,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

Reduction of flows within Tributary 5 to Kellogg Creek and the streams to which it is tributary may result from the operation of the proposed diversions. To avoid any significant impacts, there should be no significant alteration of the natural hydrograph of the stream.

Wagner & Bonsignore's report entitled *Evaluation of Stream Flows Potentially Affected by Application 30745 of Peter Michael Winery* was completed in March 2008 (Wagner & Bonsignore 2008a). This document was accepted by the Division on May 6, 2008, and is on file with the Division. To assess the cumulative flow impairments of existing and pending projects in the watershed, the analysis calculated a CFII for eight Points of Interest (POIs). The CFII at each POI was computed by dividing the total face value of water rights of record during the period of October 1 through March 31 by the estimated average unimpaired flow during the period of December 15–March 31.

Table 5 summarizes information for each POI and POD 1, and Figure 5 shows the watershed boundaries for the POIs¹².

¹² Figure 5 shows POI 1.5 and its associated watershed area. Wagner & Bonsignore identified this new point as "POI 1.5" because it lies between POI 1 and POI 2 (Wagner & Bonsignore 2008b).



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Figure 5
Points of Interest Analyzed in Water Availability Analysis
and Other Associated Hydrologic Analyses

Table 5. Description and Source for Points of Interest

POI	Description	CFII Value¹ (%)
1	POD 1 (or spillway) of Peter Michael Reservoir	37.8
1.5 ²	Kellogg Creek immediately below its confluence with Tributary 5	n/a
2	Kellogg Creek immediately downstream of the point of confluence with spillway channel	1.9
3	Kellogg Creek immediately downstream of the point of confluence with Yellowjacket Creek ³	4.6
4	Redwood Creek immediately upstream of the point of confluence with Foote Creek	7.3
5	Redwood Creek immediately downstream of the point of confluence with Foote Creek	7.3
6	Redwood Creek immediately upstream of the point of confluence with Unnamed Stream	8.4
7	Redwood Creek immediately downstream of the confluence with LaFranchi Creek	8.5
8	Redwood Creek immediately upstream of the point of confluence with Maacama Creek	7.7
9	Maacama Creek immediately downstream of the point of confluence with Redwood Creek ⁴	2.8
10	Maacama Creek immediately upstream of the point of confluence with Franz Creek	3.4
11	Maacama Creek immediately downstream of the point of confluence with Franz Creek	3.7
12	Maacama Creek immediately upstream of the point of confluence with the Russian River	3.6

¹ CFII value shown is Face Value of Rights Senior to and Including Application 30745.

² In 2008, the Division expressed interest in evaluating the estimated unimpaired flow and impaired flow in Kellogg Creek immediately below its confluence with Tributary 5. Wagner & Bonsignore (2008b) identified this new point as POI 1.5 because it lies between POI 1 and POI 2, as shown on Figure 5.

³ Based on the USGS 7.5-minute quad map for the region, Redwood Creek begins at the confluence of Kellogg Creek and Yellowjacket Creek; therefore, this POI more properly would be defined as “Redwood Creek below the confluence of Kellogg Creek and Yellowjacket Creek” (Wagner & Bonsignore 2008a).

⁴ In its letter of August 19, 2005, the State Water Board mistakenly defined POI 9 as “Redwood Creek immediately downstream of the point of confluence with Maacama Creek” (Wagner & Bonsignore 2008a).

POI 1

The CFII at POI 1 is above 10%. Per the DFG-NMFS Draft Guidelines, if the CFII is greater than 10%,

then there is reasonable likelihood of significant cumulative impacts. When the CFII is greater than 10%, site-specific studies will be required to assess impacts and the

Applicant is referred to NMFS and DFG for the scoping of site-specific fisheries studies to address these impacts.

Accordingly, additional analyses were applied to POI 1 (and the upper reservoir) to demonstrate water availability (potential yield) in excess of an FMF bypass (Wagner & Bonsignore 2008a), and to provide more detailed information about how streamflows may be affected¹³ (Wagner & Bonsignore 2008b). The results of Wagner & Bonsignore's additional hydrological analyses are discussed below.

Additionally, the Consultant performed a stream classification survey to fulfill the requirements of site-specific fisheries studies (ICF Jones & Stokes 2008). The results from this study also provide detailed information for use in evaluating whether the project meets the onstream dam exemption criteria in the DFG-NMFS Draft Guidelines and are described in more detail in the Biological Resources section of this document.

Potential Yield at POD 1 and the Upper Reservoir

The results from the daily operational yield analysis are shown in Table 7 of the Wagner & Bonsignore (2008a) report. Unimpaired daily flow at POD 1 was estimated based on proration of daily records for the Maacama Creek gage. Streamflows and diversions at POD 1 were estimated during the season of October 1 through March 31 for each of the 20 water years from 1962 through 1981. The FMF was assumed to be bypassed for all diverters shown in Table 5 of the Wagner & Bonsignore (2008a) report. The full storage capacity of the lower reservoir of 36.5 af was available in 16 of the 20 years modeled. The average seasonal diversion for the 20-year modeling period was 30.4 af. The full upper reservoir volume of 48.5 af was obtainable in 6 of the 20 years modeled. The average yield to the upper reservoir was 32.3 af. However, the upper reservoir also captures non-jurisdictional water not included in the modeling. Because the proposed project reservoirs are located on a drainage with no upstream diversions, the yield to those reservoirs was governed only by the estimated physical inflow and the assumed bypass requirement. (Wagner & Bonsignore 2008a.)

Potential Impact on Streamflows at POI 1.5

Prior to construction of the lower reservoir, the drainage area tributary to POI 1.5 included Tributary 5 and hence included the drainage area above POI 1. The spillway channel that has been constructed for the lower reservoir now directs all excess flows at POI 1 westerly out of the Tributary 5 watershed and into Tributary 4. Tributary 4 is not within the watershed of POI 1.5, therefore, under current conditions the flow at POI 1.5 excludes any contribution from the drainage area upstream of POI 1. Thus, the difference in unimpaired and impaired flows at POI 1.5 is simply the runoff from the drainage area above POI 1. As described in the Wagner & Bonsignore (2008b) report,

¹³ This latter analysis was prompted by a meeting of the Division, DFG, and the Applicant's agent and consultant on July 16, 2008. Specifically, there was interest in evaluating the estimated unimpaired flow and impaired flow in Kellogg Creek immediately below its confluence with the tributary on which the lower reservoir was constructed (Tributary 5), variously referred to as the *Historic Channel*.

drainage areas were measured, and the area-weighted mean annual precipitation amounts over the respective areas were estimated, as shown in Attachment B of the Wagner & Bonsignore (2008b) report. The contributory watershed above POI 1.5 *before* construction of the lower reservoir was about 9.1% of the Maacama Creek gage flow. The contributory watershed above POI 1 is about 0.5% of the gage flow. Therefore, the contributory watershed above POI 1.5 *after* construction of the lower reservoir is approximately 8.6% of the gage flow. The impaired flow at POI 1.5 is therefore 95% (8.6% divided by 9.1%) of the unimpaired flow at POI 1.5. This suggests that with the lower reservoir in place, Kellogg Creek flows between POI 1.5 and POI 2 are 5% less than they would be if the lower reservoir did not exist. This reduction in flow is generally in line with acceptable criteria set forth in the DFG-NMFS Draft Guidelines. Section II.2.5 of the DFG-NMFS Draft Guidelines recommends that projects of this size and type should be operated with “no appreciable diminishment (<5%) in the frequency and magnitude of unimproved high flows.”

Hydrographs for the six water years evaluated (1962, 1971, 1975, 1964, 1977, and 1981) are provided in Exhibits A through F of the Wagner & Bonsignore (2008b) report.

POIs 2 through 12

The CFII at POIs 2 and 3 and 9 through 12 is below 5%. The DFG-NMFS Draft Guidelines state that, if the CFII is less than 5%, “there is little chance of significant cumulative impacts due to the diversion and the project does not require additional studies to assess these impacts.”

The CFII values at POIs 4 through 8 are between 5 and 10%. According to the DFG-NMFS Draft Guidelines the level of impairment identified by the CFII will determine the likely study effort needed to address the significance of cumulative impacts of a new water right project. In cases where the CFII is between 5 and 10%, “the Applicant must provide additional hydrologic analysis documenting the estimated effects of cumulative diversions on the stream hydrograph at the POIs during three representative normal and two representative dry years” and “additional site-specific study may be warranted”.

As recommended and agreed upon by the Division, DFG, and NMFS at a January 30, 2007, meeting that was held on site at the Peter Michael Home Ranch Property, Wagner & Bonsignore conducted further investigations at POIs 4 and 8¹⁴. These investigations consisted of desktop hydrologic analyses involving the preparation of hydrographs showing estimated daily unimpaired and impaired flows for average and dry water years.

During a September 11, 2008, onsite meeting, the Division, DFG, and NMFS agreed that further study of Redwood Creek in the vicinity of POIs 4 and 8 was warranted. On

¹⁴ Wagner & Bonsignore had previously completed a hydrologic analysis of POI 4 prior to this meeting. However, it was agreed that inclusion of POI 8 would serve to bookend the POIs with CFII values between 5 and 10% (POIs 4 through 8).

November 6, 2008, the Division and DFG formally accepted the consultant's approach to further analyze hydrologic effects on streamflows from Application 30745.

Desktop Hydrograph Analysis

Six water years were selected to illustrate potential impacts on daily flows at POIs 4 and 8 (1962, 1971, 1975, 1964, 1977, and 1981). The DFG-NMFS Draft Guidelines direct that "three representative normal and two representative dry years" be studied for a "desktop" type analysis of daily flows. Table 8 of the Wagner & Bonsignore (2008a) report summarizes precipitation characteristics for the chosen water years. Hydrographs showing estimated daily unimpaired flow and impaired flow at POIs 4 and 8 for the six years selected are provided in Exhibits A through F of the Wagner & Bonsignore (2008a) report. In brief, results suggested that diversions to storage under Application 30745 would not adversely affect the ability of senior downstream water right holders to divert their full amount, and that hydrographs appear to show minimal streamflow impairment at POIs 4 and 8 on Redwood Creek.

Site-Specific Fisheries Study

In order to further analyze effects on streamflows at POIs 4 and 8 from Application 30745, the Consultant conducted a hydrologic modeling effort. The associated modeling report, entitled *Application 30745 of Peter Michael, Home Ranch Property—(Final) Results of Water Depth/Velocity Study, Critical Reaches, Redwood Creek (Winter and Spring of 2009)* (ICF Jones & Stokes 2010), was formally accepted for inclusion in this Initial Study by the Division on August 4, 2010. Following an October 13, 2010 on-site meeting to discuss the modeling report (and potential bypass mechanisms for the lower reservoir), both DFG (Gray 2010) and NMFS (Hines 2011) agreed to the methods and findings from the modeling report.

Based on field observations, Redwood Creek (in the vicinities of POIs 4 and 8) does not provide ideal rearing or spawning habitat for salmonids; rather, migration appears to be the dominant life stage activity in these reaches. As such, the modeling report focused on impairment of depth and velocity at critical stream reaches¹⁵ on Redwood Creek and modeled three separate scenarios:

1. unimpaired conditions (no diversions) (Scenario 1)
2. impaired by diverters senior to Application 30745 (Scenario 2)
3. impaired by diverters senior to and including Application 30745 (Scenario 3)¹⁶

¹⁵ Critical reaches were defined as portions of Redwood Creek in the vicinity of POIs 4 and 8 that were deemed difficult for fish migration, based on limited depth, a lack of a defined thalweg, and a wide channel. Both critical reaches were dominantly riffles. Water depth and velocity represent the primary parameters affecting fish passage at these critical stream reaches and, as such, were the chosen modeled variables.

¹⁶ For purposes of evaluating the potential effects of Application 30745 on fish passage conditions at POIs 4 and 8, DFG, NMFS, and the Division agreed at the on-site September 11, 2008, meeting that

The following bullets briefly summarize the methods and assumptions used to examine depth and velocity at POIs 4 and 8.

- Stream channel longitudinal profile and cross-sectional data, as well as streamflow measurements and corresponding water surface elevations over a range of flow volumes, were collected in two reaches along Redwood Creek to support the application of hydraulic modeling using the Hydrologic Engineering Center River Analysis System (HEC-RAS) model.
- Eight channel cross sections, four of which were located in the critical section of the reach, were surveyed in each reach to provide an adequate level of detail for the HEC-RAS model.
- Information on channel roughness of each reach also was collected (the Manning's "n" value).
- Modeled (i.e., estimated) flows for each scenario at POIs 4 and 8 for the period of record associated with the Maacama Creek gage were used in the modeling effort. To be consistent with the previous hydrograph comparison effort conducted by Wagner & Bonsignore (2008a), the choice of selected water years for the modeling effort included the same years as those for the hydrograph analysis described above.
- Wagner & Bonsignore's modeled flows assumed that senior diverters would be implementing their bypass flows, if applicable, and that all pending applicants would bypass the FMF at their respective POD.
- Changes in water depth and velocity were evaluated over the proposed diversion season of December 15 to March 31.
- Because the critical reaches are open channels (as opposed to culverts, which often increase water velocities relative to open channels), diversions under Application 30745 are expected to reduce, rather than increase, water velocities in the modeled critical reaches. For this reason, study results were focused on changes in water depths rather than changes in water velocities.

Types of analyses performed included four specific types of analyses/results: depth vs. flow and velocity vs. flow relationships (i.e., plots), statistical summaries, depth comparisons, and plots of water surface profiles. Each scenario was evaluated using these analyses, and each analysis was applied to every critical cross section and one representative non-critical cross section in Reaches A (POI 4) and B (POI 8) for all water years. The results from these four sets of analyses were evaluated to assess the occurrence and magnitude of changes in water depths and velocities to the estimated unimpaired water depths and velocities attributable to senior diverters of record and Application 30745.

comparing fish passage conditions under Scenario 3 to conditions that exist under Scenario 2 was most relevant to evaluating the potential effects of this water rights application.

The following bullets briefly summarize the conclusions used to describe changes in depth and velocity at POIs 4 and 8.

- The percent change for daily average maximum water depth between Scenario 1 and Scenario 2 never exceeded 5.70%.
- Only two comparison values were above 5%, suggesting that senior diverters' operations (Scenario 2) had minimal effect on unimpaired conditions (Scenario 1).
- The percent change for daily average maximum water depth between Scenario 2 and Scenario 3 never exceeded 1.09%, and most of the other comparison values were well below 1%.
- Across all water years analyzed, there are only two instances (1975 and 1981) when Scenarios 2 and 3 were shown to decrease water depths by 0.1 foot or more, compared to Scenario 1 (however nearly all of these depth changes occurred under higher flow conditions, and therefore would not be expected to negatively affect fish passage). In the remaining water years analyzed, Scenarios 2 and 3 did not result in noticeable decreases in water depth or an increase in the number of days that fish passage criteria were not met, compared to Scenario 1.
- The percent change for average water velocity between Scenario 1 and Scenario 2 never exceeded 6.14%.
- Only one comparison value was above 5%, suggesting that senior diverters' operations (Scenario 2) had minimal effect on unimpaired conditions (Scenario 1).
- The percent change for average water velocity between Scenario 2 and Scenario 3 never exceeded 0.55%, and most of the other comparison values were well below 0.5%.
- The average water velocities modeled for all three scenarios decreased with impairment and were within the range considered passable by fish in both reaches.

In summary, each of the four analyses concluded that senior diverters (i.e., Scenario 2) have a slight effect on both average maximum water depth and average water velocity values compared to unimpaired conditions (Scenario 1) and the incremental effects of Application 30745 (Scenario 3) on water depths and average water velocity are minimal (less than 1.09% and 0.55%, respectively). Accordingly, the study supports the hypothesis that fish passage at POIs 4 and 8 is not negatively influenced by the requested diversion associated with Application 30745.

The results also suggest that fish passage for reaches of Redwood Creek, in and around POIs 5, 6, and 7, are not negatively influenced by the requested diversion associated with Application 30745 because of their proximity to the critical reaches at POIs 4 and 8. Fish passage in reaches upstream and downstream of POIs 4 and 8 is also not negatively influenced because the CFII values are lower (<5%).

Water Availability Analysis Summary Findings

The high CFII value at POI 1 is above 10%. However, the Consultant performed a stream classification survey to fulfill the requirements of site-specific fisheries studies (ICF Jones & Stokes 2008). POI 1 is high in the watershed and receives water from three unnamed tributaries (Tributaries 1, 2, and 3), none of which are or historically were fish-bearing channels. The closest analyzed POI on a fish-bearing stream, POI 2, is located on Kellogg Creek immediately downstream of the point of confluence with Tributary 4 (the Spillway Channel). The CFII at POI 2 is 1.9%. Additionally, a separate analysis that was applied to POD 1 to provide more detailed information about how streamflows may be affected (Wagner & Bonsignore 2008b) concluded that, with the lower reservoir in place, Kellogg Creek flows between POI 1.5 and POI 2 are only 5% less than they would be if the lower reservoir did not exist.

The CFII values at POIs 2 and 3 and 9 through 12 are below 5%. Based on the DFG-NMFS Draft Guidelines, effects on streamflows at POIs 3 through 8 can be considered insignificant with no further analysis needed.

For POIs 4 through 8 that have CFII values between 5 and 10%, the relatively low percentage change in average maximum water depths and average water velocities, as modeled by the site-specific fisheries study, suggests that the incremental effect of the Applicant's diversion on existing impaired flow conditions, and therefore fish passage at POIs 4 through 8, is minimal.

The results from the water availability analyses indicate that there is sufficient water supply in the watershed for the proposed project and approval of the application should not adversely affect any senior water right holders. Based on the CFII results and results from the hydrologic modeling effort, the consultants have concluded that impacts on water volumes and seasonal flow patterns from project implementation would be less than significant with mitigation incorporated (with the mitigation being the implementation of the required FMF). There is no significant cumulative impact on the natural hydrograph of downstream water bodies as a result of the proposed project.

g iii. Would the change in the 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 stated above, operation of POD 1 at the lower reservoir will not significantly change the water volume and/or the pattern of seasonal flows in the affected watercourse, and therefore will not reduce the available aquatic habitat or riparian habitat for native species of plants or animals. Flows in Tributary 4 will not be significantly affected by the presence of the proposed bypass facility (which will convey the FMF into Tributary 5) because once the lower reservoir is filled, it will continue to spill into Tributary 4 as it currently does without the bypass in place. The duration to fill the lower reservoir is expected to be minimal as the Applicant intends to utilize other sources of water ahead of withdrawals from the reservoir to maintain recreational use of the reservoir as far into the summer season as possible.

Furthermore, compliance with the following permit terms, substantially as follows, would ensure the proposed project does not result in any significant impacts on available aquatic habitat or riparian habitat for native species of plants or animals:

- For the protection of fish and wildlife, Permittee shall during the period from December 15 through March 31 bypass a minimum of 0.56 cfs. The total streamflow shall be bypassed whenever it is less than 0.56 cfs. Permittee shall bypass the total streamflow from April 1 through December 14.
- Prior to commencement of construction of the bypass facility, Permittee shall file a Pre-Construction Notification with USACE to comply with Section 404.
- Prior to commencement of construction of the bypass facility, Permittee shall file a report pursuant to Water Code Section 13260 and shall comply with all waste discharge requirements imposed by the California RWQCB, San Francisco Bay Region, or by the State Water Board.
- The Permittee shall obtain all necessary federal, state, and local agency permits required by other agencies prior to construction and diversion of water. Copies of such permits and approvals shall be forwarded to the Chief, Division of Water Rights.

In addition to the permit terms described above, a Draft Compliance Plan has been submitted to the Division (Wagner & Bonsignore 2011). The plan describes the facilities, monitoring actions, and operations that will be used to bypass minimum flows during the diversion season, and release flows collected in the reservoir outside of the diversion season. Under the terms of this plan, the Permittee is required to passively bypass all jurisdictional channel flows from incipient trickle up to a minimum of the FMF, which has been determined by analysis to be 0.56¹⁷ cfs. This bypass will occur entirely at the proposed bypass facility on Tributary 3. The diversion structure has been designed to passively bypass the FMF before any diversion can occur, and thus bypassed flows need not be measured. Diversion to storage will occur only when flow is greater than 0.56 cfs. The permissible season of diversion will be December 15 through March 31.

Construction of the bypass facility on Tributary 3 could also potentially result in significant effects on aquatic organisms and plants. Under CEQA, if a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measures shall be discussed but in less detail than the significant effects of the project as proposed. (Cal. Code Regs, tit. 14, div. 6, ch. 3, §15126.4.) Therefore, potentially significant effects resulting from construction of the bypass facility (which is mitigation for the diversion of water under this project) are discussed in Appendix B.

The justification for bypassing directly into Tributary 5 (as opposed to Tributary 4 [the Spillway Channel]) stems from agency consultations during a site visit held on October

¹⁷ 0.56 cfs is the modified FMF and has been increased from the original value of 0.46 cfs to account for the streamflow contributions of Tributaries 1 and 2 to the lower reservoir.

13, 2010, with DFG, NMFS, the Division, and the Applicant's agent and consultants. The January 9, 2009, report entitled *Peter Michael Winery, Home Ranch Property (Application 30745)—Evaluation of Kellogg Creek between Tributaries 4 and 5 to Determine Preferred Location for Tributary 5 Reservoir Bypass Releases* (ICF Jones & Stokes 2009) recommends bypassing the FMF to Tributary 5, the Historic Channel, rather than to its present location (Tributary 4). Increasing flows in Tributary 5, a Class III drainage, could enhance fish habitat in the stretch of Kellogg Creek from the confluence of Tributary 5 to the confluence of Tributary 4, potentially benefiting adult and juvenile migration, spawning, and egg incubation in this reach of Kellogg Creek, compared to existing conditions. Additionally, bypassed water released into Tributary 5 could percolate into the ground and streambank along Tributary 5 and possibly enhance late spring and early summer flows to Kellogg Creek. Finally, the bypass of the FMF to Tributary 5 in essence would enhance 861 feet of available amphibian and benthic macroinvertebrate habitat.

Refer to Figure App. B-1 in Appendix B and Wagner & Bonsignore's *Application 30745 of Peter Michael—Draft Compliance Plan* (2011) for additional information regarding plans and specifications of the proposed weir, as well as the pipeline routing.

g iv and v. Would the change in the water volume and/or the pattern of seasonal flows in the affected watercourse result in: iv) a significant change in seasonal water temperatures due to changes in the patterns of water flow in the stream?; or v) a substantial increase or threat from invasive, non-native plants and wildlife?

The proposed project will not result in a change in the water volume and/or the pattern of seasonal flows in the affected watercourse that would cause either a significant change in seasonal water temperatures due to changes in the patterns of water flow in the stream or a substantial increase or threat from invasive, nonnative plants and wildlife, for reasons discussed herein and below in the Biological Resources section. Water released from the lower reservoir would end up in Tributary 4 (via spill flows) and Tributary 5 (via the required bypass flow). Spill flows are considered part of the CEQA baseline condition for Application 30745, and water temperatures associated with spill flows after the implementation of the bypass facility are expected to remain the same as current conditions. Water temperatures in Tributary 5 would remain similar to where the water is being bypassed from (Tributary 3) because the flow would be contained in a 12-inch-diameter pipeline that would be buried under the existing gravel pathway around the lower reservoir, and released into Tributary 5 below the dam. This bypass pipeline would connect with an existing 12-inch-diameter storm drain pipeline, originating near the downstream toe of the dam, which empties into Tributary 5, and the diversion would only occur during winter when temperatures are cooler (between December 15 and March 31). As such, water would be completely transferred underground and water temperatures would not be elevated en route.

Additional Terms

To ensure that water is diverted in accordance with the project description and to minimize the project's potential to cause impacts on hydrology and water quality, the following permit terms, substantially as follows, will be included in any permit or license issued pursuant to Application 30745.

- The capacity of the reservoir at Point of Diversion 1 covered under this permit shall not exceed 36.5 af.
- The water appropriated shall be limited to the quantity that can be beneficially used and shall not exceed a total of 85 afa to be collected from December 15 of each year to March 31 of the succeeding year.
- No water shall be diverted under this right unless the Permittee is monitoring the bypass flow required by this right in accordance with a compliance plan, satisfactory to the Deputy Director for Water Rights. The Permittee shall submit a report on bypass flow compliance activities in accordance with the schedule contained in the compliance plan.
- Permittee shall report any noncompliance with the terms of the permit to the Deputy Director for Water Rights within 3 days of identification of the violation.

5. BIOLOGICAL RESOURCES

Would the project:

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

Study Area

For biological resources, the study area consists of the approximately 605-acre Home Ranch property (Figure 6). The study area includes the POU for irrigation, which encompasses approximately 151 acres within the Home Ranch Property (Figure 4). The baseline conditions in the study area and the proposed project are described below.

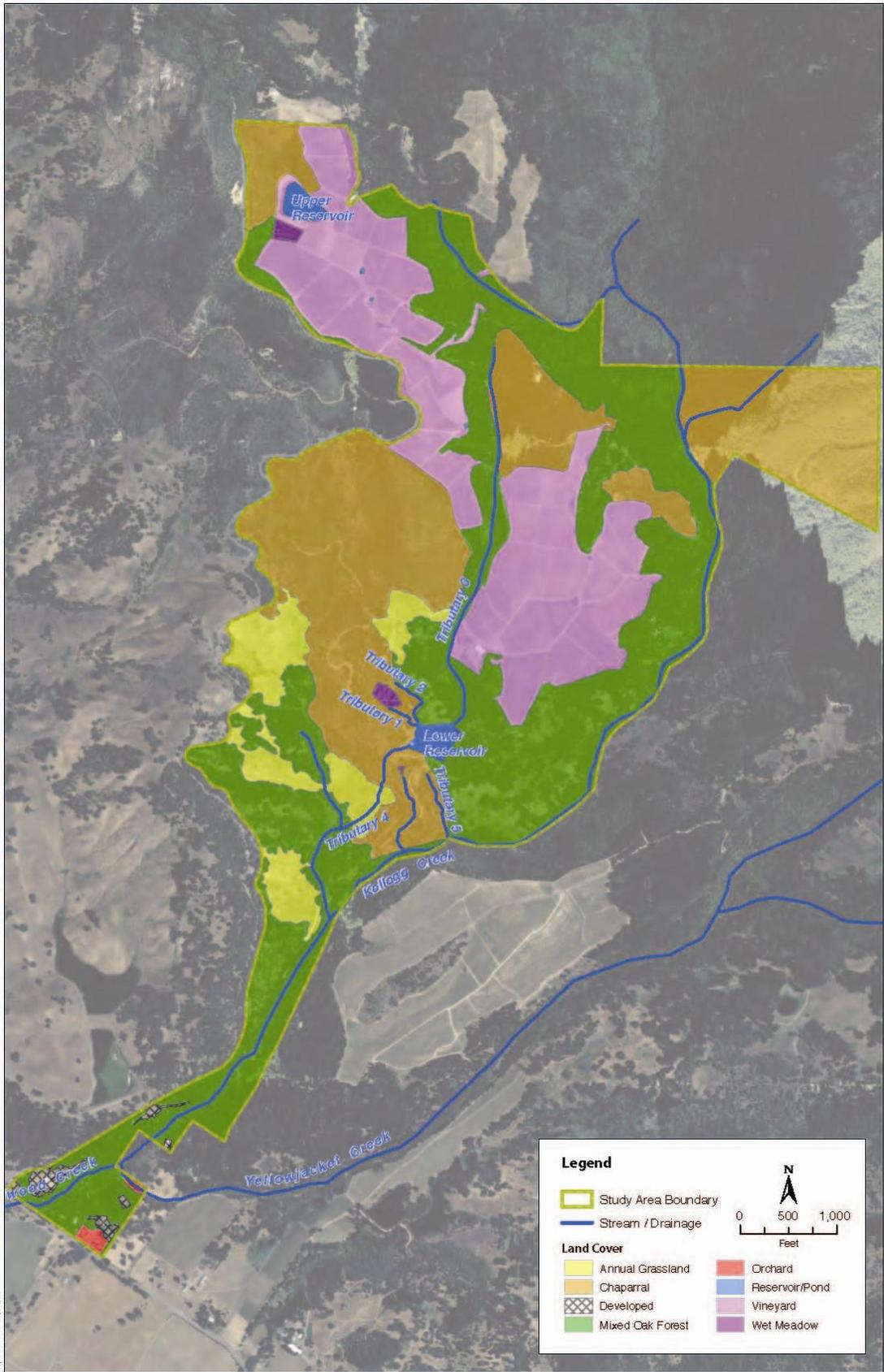


Figure 6
Land Cover Types in the Study Area

Baseline

The baseline conditions pertaining to biological resources in the study area consist of natural communities and developed areas that were present in August 1998, because that is when Application 30745 was filed with the Division. Developed portions of the study area in August 1998 consisted of the lower reservoir, its associated pump and transmission line, and 112 acres of vineyard (Figure 4). Thirty-two acres were cleared and graded in the 1970s; however, historical aerial photographs show some regrowth of woody vegetation (i.e., trees and shrubs) in these areas at the time of baseline conditions. The study area includes areas that were converted from natural communities into vineyard and construction of the upper reservoir after August 1998. The types of natural communities that were present in 1998 in those portions of the study area have been identified based on historical aerial photographs. The remainder of the study area has been undeveloped.

Proposed Project

The proposed project includes the conversion of 39 acres of natural communities to vineyard and the construction of the upper reservoir. For the vineyard expansion, 32 previously disturbed (cleared and graded) acres were planted between August 7, 1998, and July 21, 2000; 7 acres were cleared, graded, and prepared in 2004 and planted in 2005. The upper reservoir, which encompasses approximately 3 acres, was constructed in 2001.

Construction of the bypass facility on Tributary 3 is not considered part of the proposed project because the bypass is considered a mitigation measure. However, this construction could potentially result in significant effects on aquatic organisms and plants. Under CEQA, if a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measures shall be discussed but in less detail than the significant effects of the project as proposed. (Cal. Code Regs, tit. 14, div. 6, ch. 3, §15126.4.) Therefore, potentially significant effects resulting from construction of the bypass facility are discussed in Appendix B.

Methodology

No biological investigations were conducted in 1998, or prior to the Applicant's vineyard expansion or construction of the upper reservoir, and no reports that describe the biological conditions in the study area at the time of baseline conditions are available. Therefore, the methods used to identify biological resources in the study area, as they may have existed in 1998, consisted of a review of existing information, reconnaissance-level surveys in 2008 and 2011, identification of wetlands and other waters in 2011, and a tree survey in 2011. These elements are described below.

Review of Existing Information

The key sources of existing information used to evaluate biological resources in the study area were:

- A records search of the California Natural Diversity Database (CNDDDB) for the Mount Saint Helena and the eight surrounding USGS 7.5-minute quadrangles (California Natural Diversity Database 2011).
- The USFWS list of endangered, threatened, and proposed species for the Mount Saint Helena 7.5-minute quadrangle (U.S. Fish and Wildlife Service 2011).
- DFG's List of Special Vascular Plants, Bryophytes, and Lichens (California Department of Fish and Game 2011b).
- A list from the California Native Plant Society's (CNPS's) 2011 online Inventory of Rare and Endangered Plants for the Mount Saint Helena and the eight surrounding USGS 7.5-minute quadrangles (California Native Plant Society 2011).
- Historical aerial photographs of the study area on Google Earth that were flown in 1993 (available: <http://www.google.com/earth/index.html>).
- Sonoma County VESCO permits obtained by the Applicant for the study area.
- Peter Michael Winery, Home Ranch Property (Application 30745)—Stream Classification of Five Unnamed Tributaries to Kellogg Creek, Sonoma County (February 18–19 and March 13, 2008) (ICF Jones & Stokes 2008).

Reconnaissance-Level Surveys

An ICF International (formerly ICF Jones and Stokes) botanist and a wildlife biologist conducted initial reconnaissance-level field surveys on March 11 and April 21, 2008. The survey area for the 2008 field visit consisted of the 39 acres of vineyard expansion, the 3-acre upper reservoir, and the edges of the adjacent natural communities.

Additional reconnaissance-level surveys, to further identify potential biological resources, were conducted by an ICF wildlife biologist on September 12, 2011, and by an ICF botanist on September 29, 2011. In general, the purposes of the reconnaissance-level surveys were to:

- Characterize natural communities and associated wildlife habitat uses in the areas examined during the surveys.
- Evaluate the potential for occurrence of special-status plant and wildlife species in the study area to determine whether additional surveys would be required during the appropriate season.

Regulatory Setting

This section provides an overview of the laws and regulations pertaining to biological resources in the study area.

Federal Regulations

Endangered Species Act

USFWS and the NMFS have jurisdiction over species listed as threatened or endangered under Section 9 of the ESA. In general, NMFS is responsible for protection of ESA-listed marine species and anadromous fish, 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 this case, the USACE) 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 (BiOp) 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 (HCP) 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

The CWA was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA serves as the primary federal law protecting the quality of the nation’s surface waters, including lakes, rivers, and coastal wetlands.

The CWA empowers the EPA 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 single, discrete location, such as an outfall structure or an excavation or construction site. *Nonpoint-source pollution* originates over a broader area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nation’s waters are unlawful unless specifically authorized by a permit; permit review is the CWA’s primary regulatory tool. 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 wetlands, including any or all of:

- Areas within the OHWM of a stream, including non-perennial streams with a defined bed and bank and any stream channel that conveys natural runoff, even if it has been realigned.
- Seasonal and perennial wetlands, including coastal wetlands.

On January 9, 2001, the U.S. Supreme Court made a decision in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers* (SWANCC) [121 S.Ct. 675, 2001] that affected the USACE's jurisdiction in isolated waters. Based on SWANCC, the USACE no longer has jurisdiction or regulates isolated wetlands (i.e., wetlands that have no hydrologic connection with water of the United States).

More recently, a federal ruling on two consolidated cases (June 19, 2006; *Rapanos v. United States and Carabell v. U.S. Army Corps of Engineers*), referred to as the *Rapanos decision*, affects whether some waters or wetlands are considered jurisdictional under the CWA. In these cases, the U.S. Supreme Court reviewed the USACE's definition of waters of the United States and whether it extended to tributaries of traditional navigable waters (TNW) or wetlands adjacent to those tributaries. The decision provided two standards for determining jurisdiction of water bodies that are not TNWs:

1. If the non-TNW is a relatively permanent water (RPW) or is a wetland directly connected to an RPW, or
2. If the water body has "significant nexus" to a TNW. The significant nexus definition is based on the purpose of the CWA ("restore and maintain the chemical, physical, and biological integrity of the Nation's waters").

Guidance issued by the EPA and USACE on the Rapanos decision requires application of these two standards and use of substantially more documentation to support a jurisdictional determination for a water body.

Applicants must obtain a permit from the USACE for all discharges of dredged or fill material into waters of the United States, including adjacent wetlands, before proceeding with a proposed activity. 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 are preauthorized and are issued to cover multiple instances of similar activities expected to cause only minimal adverse environmental effects. The nationwide permits (NWP) are a type of general permit issued to cover particular fill activities. Each NWP specifies particular conditions that must be met for the NWP to apply to a particular project.

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 the requirements of the National Environmental Policy Act (NEPA), ESA, and the National Historic Preservation Act have been met. In addition, the USACE cannot issue or verify any permit until a water quality certification or a waiver of certification has been issued pursuant to CWA Section 401.

Permits for Stormwater Discharge (Section 402)

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the NPDES program, administered by EPA. In California, the State Water Board is authorized by EPA to oversee the NPDES program through the RWQCBs (see the related discussion under State of California, Porter-Cologne Water Quality Control Act). The study area is located within the jurisdiction of the San Francisco Bay RWQCB.

NPDES permits are required for projects that disturb more than 1 acre of land. The NPDES permitting process requires the applicant to file a public notice of intent (NOI) to discharge stormwater, and to prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and a description of proposed construction activities. In addition, it describes the BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. Applicants are required to conduct annual monitoring and reporting to ensure that BMPs are implemented correctly and effective in controlling the discharge of stormwater-related pollutants.

Water Quality Certification (Section 401)

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification 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. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) also must comply with CWA Section 401.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (Title 16, United States Code [USC], Part 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the former Soviet Union and authorizes the U.S. Secretary of the Interior 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 (16 USC 703, 50 Code of Federal Regulations [CFR] 21, 50 CFR 10). Most actions that

result in taking of or the permanent or temporary possession of a protected species constitute violations of the MBTA. The MBTA also prohibits destruction of occupied nests. The Migratory Bird Permit Memorandum (MBPM-2) dated April 15, 2003, clarifies that destruction of most unoccupied bird nests is permissible under the MBTA; exceptions include nests of federally listed threatened or endangered migratory birds and bald eagles and golden eagles. USFWS is responsible for overseeing compliance with the MBTA. Most bird species and their occupied nests that occur in the proposed project area would be protected under the MBTA.

State of California

California Environmental Quality Act

CEQA is the regulatory framework by which California public agencies identify and mitigate significant environmental impacts. Although threatened and endangered species are protected by specific federal and state laws, the State CEQA Guidelines Section 15380(b) provides that a species not listed under ESA or CESA may be considered rare or endangered if it can be shown that the species meets certain specific criteria. The criteria have been modeled after the definitions of ESA and sections of the California Fish and Game Code discussing rare and endangered plants and animals.

A project normally 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 CESA, as well as any other species that meets the criteria of the resource agencies or local agencies—for example, the DFG-designated species of special concern and plant species assigned a Rare Plant Rank by DFG. The State CEQA Guidelines specify that the lead agency preparing a CEQA compliance document must consult with and receive written findings from USFWS and DFG 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 CESA in 1984. The act prohibits the take of endangered and threatened species; however, habitat destruction is not included in the state's definition of *take*. 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. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and promote conservation of these species. DFG 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 of 1977 (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 DFG 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 from take for a variety of species, referred to as *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.” Except for take related to scientific research, all take of fully protected species is prohibited.

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 Secretary of the Interior 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. Except for take related to scientific research, all take of fully protected species is prohibited.

Section 1602—Lake and Streambed Alteration Agreements

Section 1602 of the California Fish and Game Code requires project proponents to notify DFG 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 fish or wildlife resource may be substantially adversely affected, DFG 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.” 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.

Local

Sonoma County Tree Protection Ordinance

The Sonoma County Tree Protection Ordinance is described in Article 88 of the Sonoma County Zoning Code (Sonoma County Permit and Resource Management Department 2005, 2010). Several agricultural uses are exempt from the Tree Protection Ordinance, including livestock, commercial aquaculture, commercial mushroom farming, and wineries. Therefore, the proposed project is exempt from compliance with the tree ordinance.

Environmental Setting

The study area is located on the lower southwest slopes of Mount Saint Helena in Sonoma County in the Inner North Coast Ranges subdivision of the California Floristic Province (Hickman 1993:45). Approximate elevations in the study area vary between 500 feet above mean sea level at the western boundary and flatter portions of the proposed project area, to 1,717 feet at the top of Sugarloaf Hill. Most of the land adjacent to the project area is undeveloped, and the northeast corner of the project area abuts Robert Louis Stevenson State Park. The southern end of the study area abuts Knights Valley, which contains a mixture of vineyards, wineries, rural residences, and undeveloped areas. As described in the Geology and Soils section, rhyolitic and

ultramafic (i.e., serpentine) soils are known to occur in the vicinity of the study area; however, the dominant soil map unit in the study area is Kidd Gravelly Loam, 9% to 50% slopes.

Land Cover Types

The study area contains natural communities, wetlands and other waters, vineyards, orchards, and developed areas. Each of the land cover types and its associated wildlife species is discussed below and depicted in Figure 6.

Natural Communities

Chaparral

Chaparral in the study area is dominated by manzanita (*Arctostaphylos* spp.), but knobcone pines (*Pinus attenuata*) are common. Other shrub species observed in chaparral in the study area are bush monkeyflower (*Mimulus aurantiacus*), chamise (*Adenostoma fascicularis*), redberry (*Rhamnus crocea*), coyote brush (*Baccharis pilularis*), and ceanothus (*Ceanothus* spp.). The herbaceous understory of chaparral is sparse, and representative species present are California brome (*Bromus carinatus*), California poppy (*Eschscholzia californica*), soaproot (*Chlorogalum pomeridianum*), and phacelias (*Phacelia* spp.). Scattered serpentine outcrops are present in the chaparral. At the time of baseline conditions, chaparral covered approximately 30 of the 39 acres that were converted to vineyard and the approximately 3-acre area where the upper reservoir was constructed for the proposed project (Figure 4).

Chaparral provides habitat for various reptiles, birds, and mammals. Several bird species use these habitats for nesting and foraging.

Mixed Oak Forest

Mixed oak forest has an overstory that is dominated by black oak (*Quercus kelloggii*), Oregon oak (*Q. garryana*), and valley oak (*Q. lobata*). Other trees present are Douglas-fir (*Pseudotsuga menziesii* var. *menziesii*), Pacific madrone (*Arbutus menziesii*), and California bay (*Umbellularia californica*). Typical species present in the shrub understory, which is relatively sparse, are coyote brush and poison-oak (*Toxicodendron diversilobum*). Where present, the herbaceous understory contains grasses intermixed with native and nonnative forbs. Representative species are hedgehog dogtail grass (*Cynosurus echinatus*), canary grass (*Phalaris* sp.), fireweed (*Epilobium* sp.), and field hedge-parsley (*Torilis arvensis*). Scattered serpentine outcrops are present in the mixed oak forest. At the time of baseline conditions, approximately 9 of the 39 acres of the areas that were converted to vineyard for the proposed project were mixed oak forest (Figure 4).

The mixed oak forest provides habitat for several common reptiles, birds, and mammals, including bats. Several small birds and raptors use this habitat for foraging and nesting.

Annual Grassland

Annual grassland occurs in scattered patches in the study area. Representative dominant annual grass species are wild oat (*Avena* sp.), California brome, hedgehog dogtail grass, ripgut brome (*B. diandrus*), and rattlesnake grass (*Briza maxima*). Annual grassland also contains a mixture of native and nonnative forbs such as clovers (*Trifolium* spp.), field hedge-parsley, fireweed, centaury (*Centaureum* sp.), and yellow star-thistle (*Centaurea solstitialis*).

Annual grassland provides habitat for amphibians (non-breeding), reptiles, birds, and burrowing mammals. Annual grassland provides important foraging habitat for wildlife.

Riparian Areas

Riparian areas in the study area are associated with Tributaries 1–5, Kellogg Creek, and Redwood Creek. The density of riparian vegetation cover is variable among tributaries and along the reaches of individual tributaries. Representative plants in riparian areas are valley oak, red alder (*Alnus rubra*), bigleaf maple (*Acer macrophyllum*), dogwood (*Cornus* sp.), wild grape (*Vitis californica*), willows (*Salix* spp.), rushes (*Juncus* spp.), and sedges (*Carex* spp.). Himalayan blackberry (*Rubus armeniacus*) and Scotch broom (*Cytisus scoparius*), which are nonnative, invasive species, occur in the riparian area along Kellogg Creek. A nonnative firethorn (*Pyracantha* sp.) bush is also present along Kellogg Creek. The riparian habitats are not depicted in Figure 6 because the mapping effort was conducted from aerial photographs and the difference between riparian habitats and surrounding forests is not discernible.

Riparian areas represent important breeding habitat for many bird species as well as foraging habitat for a variety of wildlife, including bats. Amphibians often use riparian areas during the drier months as aquatic habitats begin to dry up.

Wetlands and Other Waters

The study area contains wetlands and other waters (non-wetlands) that represent potential waters of the United States. Some of these features (e.g., Tributaries 1–5, Kellogg Creek) have been studied formally (i.e., stream classification, delineation) because they would be directly affected by the proposed project; however, the study area contains additional wetlands and other waters that have not been studied formally, including wet meadows, detention ponds, and unnamed tributaries.

Wet Meadows

Three areas of wet meadow are known from the study area. One of the wet meadows occurs between Tributaries 1 and 2, the second is located adjacent to the upper reservoir, and the third is located southwest of the lower reservoir (Figure 6). The wet meadow located southwest of the lower reservoir, which is located on a slope, appears to be sustained by groundwater seepage from the lower reservoir and connects to an unnamed tributary of Kellogg Creek at its southern boundary. Representative vegetation in wet meadows is spikerush (*Eleocharis* spp.), rushes, sedges, and hyssop loosestrife (*Lythrum hyssopifolium*). The wet meadow adjacent to the upper reservoir is ringed by willows (*Salix* sp.) and cottonwood (*Populus* sp.).

Wet meadows provide foraging habitat for reptiles, birds, and mammals.

Vineyard Detention Ponds

The vineyard contains three detention ponds that capture surface runoff from the adjacent areas. Water was observed in the northernmost pond during the September 12, 2011 field visit; the other two ponds were dry at that time. The two northernmost ponds are densely vegetated with cattails, but the pond farthest south is unvegetated. These ponds pool to the approximate maximum depth of 3 feet. The northernmost ponds appear to hold water for an extended period of time based on the presence of dense cattails. The ponds are relatively small, ranging from approximately 100 square feet to 200 square feet in size.

The two northernmost detention ponds represent potential breeding and foraging habitat for amphibians and birds. They also represent potential foraging habitat for reptiles and mammals; however, available cover approaching these areas is limited to vineyards.

Named and Unnamed Tributaries

The study area contains approximately four unnamed tributaries. Five other tributaries have a hydrologic connection to Kellogg Creek and have been designated as

Tributaries 1, 2, 3, 4, and 5. A brief description of each these five tributaries is provided below, and additional information can be found in the report entitled *Peter Michael Winery, Home Ranch Property (Application 30745)—Stream Classification of Five Unnamed Tributaries to Kellogg Creek, Sonoma County (February 18–19 and March 13, 2008)* (ICF Jones and Stokes 2008). The remaining four unnamed tributaries in the study area are smaller, shorter channels that are tributary to the streams discussed below (Figure 6). These channels generally do not support riparian vegetation and provide little instream habitat for wildlife; they were not and will not be affected by the proposed project.

Tributary 1

Tributary 1 is an intermittent channel that originates in a wet meadow approximately 905 feet uphill from the lower reservoir. Tributary 1 conveys flows from north to south and empties into the northwest corner of the lower reservoir. The steep banks of the channel support woody riparian vegetation, and portions of the channel are vegetated. The amount of instream and canopy cover varies from low to high. Tributary 1 is an incised, step-pool channel with small-scale bedforms (e.g., pools, riffles, some runs), indicating that scour and deposition can occur in this channel when it is flowing. The channel substrate consists predominantly of fines and gravels, but pebbles and cobbles are also present. The mean bankfull width of Tributary 1 ranges from 5.0 to 15.0 feet, with an average of 7.40 feet.

Tributary 1 may be used by amphibians and reptiles for foraging or dispersal habitat, but no suitable breeding habitat was identified during the reconnaissance-level survey conducted there in 2011. No evidence of aquatic fauna, including fish, or amphibians (e.g., frogs, salamanders), or reptiles was observed in the channel during surveys conducted in 2008 or 2011. This stream does not provide suitable habitat for fish.

Tributary 2

Tributary 2 is an intermittent/ephemeral channel that originates in the same wet meadow as Tributary 1 and conveys flows from north to south into the northwest corner of the lower reservoir. The banks of the channel, which are very steep, support woody riparian vegetation, and portions of the channel are vegetated. The amount of instream and canopy cover varies from absent to very high. The two channels that compose Tributary 2 are incised, step-pool channels with small-scale bedforms (e.g., pools, riffles, some runs), indicating that scour and deposition can occur in these channels when they are flowing. The channel substrate consists predominantly of fines and gravels, but pebbles and cobbles are also present. The mean bankfull width of Tributary 2 ranges from 2.0 to 9.0 feet, with an average of 5.25 feet.

Tributary 2 may be used by amphibians or reptiles for foraging or dispersal habitat, but no suitable breeding habitat was identified during the reconnaissance-level survey conducted in 2011. No evidence of aquatic fauna, including fish, or amphibians (e.g., frogs, salamanders), or reptiles was observed in the channel during surveys conducted in 2008 or 2011. This stream does not provide suitable habitat for fish.

Tributary 3

Tributary 3 is an intermittent channel that originates in the steep topography associated with Sugarloaf Hill to the north and conveys flows from north to south into the northeastern corner of the lower reservoir. The banks of the channel, which are very steep, support woody riparian vegetation, and portions of the channel are vegetated. The amount of instream and canopy cover varies from moderate to high. Tributary 3 is a cascade channel with large-scale bedforms (e.g., deep scour pools, boulder/cascade steps, some runs), indicating that scour and deposition regularly occur in this channel when it is flowing. The channel substrate varies from fines to cobbles in the scour pools, and boulders are dominant on the cascade steps. The mean bankfull width ranges from 5.0 to 13.0 feet, with an average of 10.2 feet. The mean width of Tributary 3 is 5 feet at the OHWM, which was identified based on the natural line impressed on the bank and the absence of vegetation.

Tributary 3 may provide foraging and dispersal habitat for amphibians and reptiles but possesses poor breeding habitat. Most of the pools observed were scour pools that receive high velocity flows, and the channel has a high canopy cover (i.e., minimal open areas for basking). No evidence of fish was observed during the stream classification fieldwork (ICF Jones & Stokes 2008). Additionally, no habitat exists to sustain fish seasonally. However, a bullfrog (*Lithobates catesbeianus*), which likely came from the nearby lower reservoir, was observed during the fieldwork for the stream classification (ICF Jones & Stokes 2008).

Tributary 4

Tributary 4 is an intermittent stream, referred to as the Spillway Channel, that conveys flows from the lower reservoir approximately 2,644 feet to its confluence with Kellogg Creek. The steep banks of Tributary 4 support woody riparian vegetation, and portions of the upper reach of the channel are vegetated. The amount of instream cover ranges from absent to very high, and canopy cover varies from low to high. Instream cover is provided largely by substrate (e.g., boulder and cobbles), with lesser amounts provided by instream woody material, water depth, and turbulence. Tributary 4 is an incised, step-pool channel with small- and large-scale bedforms (e.g., pools, riffles, some runs), indicating that scour and deposition regularly occur in this channel when it is flowing. The channel substrate is mixed and contains fines, gravels, pebbles, cobbles, and boulders. The mean bankfull width of Tributary 4 ranges from 4.5 to 18.0 feet, with an average of 10.62 feet.

A series of ephemeral tributaries drains to Tributary 4. The combination of these other tributaries and nearby hillslope processes result in the delivery of a significant amount of sediment and water seasonally into Tributary 4.

Tributary 4 provides suitable habitat for amphibians and fish. Juvenile steelhead (*Oncorhynchus mykiss irideus*) were observed in this stream at three separate locations in March 2008. These fish presumably left Kellogg Creek and entered Tributary 4 and moved upstream in response to seasonal flows following winter storms; the intermittent

nature of Tributary 4 precludes year-found rearing in this stream, and spawning habitat is lacking. Areas of the channel represent potential amphibian breeding habitat. American bullfrogs were observed in a small pool during the September 2011 reconnaissance-level surveys.

Tributary 5

Tributary 5 (the Historic Channel) is an ephemeral channel that originates in a culverted hollow approximately 190 feet below the face of the dam at POD 1 and terminates at Kellogg Creek. Tributary 5 is approximately 861 feet long and was formerly the main contributing channel to Kellogg Creek prior to the construction of the lower reservoir but has been hydrologically cut off from upstream receiving waters for at least 42 years. The banks of Tributary 4, which are very steep, support sparse woody riparian vegetation, and a small amount of the channel is vegetated. The amount of instream cover and canopy cover ranges from low to high. No significant channel complexity exists, as small-scale bedforms (e.g., pools, riffles, runs) are generally absent. Scour and deposition may occur periodically immediately after large precipitation events but not enough to sustain adequate aquatic fauna habitat. The channel substrate is predominantly fines. The mean bankfull width of Tributary 5 ranges from 1.7 to 10.0 feet, with an average of 5.0 feet.

No evidence of aquatic fauna, including fish, non-fish vertebrates, or aquatic insects was observed in Tributary 5 during the winter 2008 surveys or the September 2011 surveys. Tributary 5 does not provide suitable breeding or cover habitat for amphibians. This stream does not provide suitable habitat for fish.

Kellogg Creek

Kellogg Creek is a perennial stream channel that is slightly sinuous with a few areas of locally higher sinuosity. The creek is generally heavily vegetated on the upland slopes, has a natural channel bottom dominated by mixed substrate (including bedrock), and has well-defined bed and banks. The channel slope is steep in the upper reaches and moderate in the downstream reaches. Kellogg Creek is a geomorphologically dynamic stream with generally stable streambanks, a range of sediment sizes, and abundant aquatic habitat. Kellogg Creek also has a significant amount of native vegetation, including native grasses and sedges (*Carex* spp.), Douglas-fir, black oak, coast redwood, valley oak, Pacific madrone, California bay, red alder, and some willow (*Salix* spp.) species.

Kellogg Creek provides important migratory, spawning, and rearing habitat for anadromous salmonids. It also provides suitable breeding and foraging habitat for amphibians and reptiles, and is used by mammals for foraging. Signal crayfish (*Pacifastacus leniusculus*) were observed in Kellogg Creek during the September 12, 2011, site visit.

Redwood Creek

Redwood Creek is a perennial stream channel that forms at the confluence of Kellogg Creek and Yellowjacket Creek and flows through a small section at the southern end of the study area. The stream is generally low gradient with a natural channel bottom, well-defined bed and banks, and a range of sediment sizes. The banks are heavily vegetated with a native grasses, sedges, Douglas-fir, black oak, valley, Pacific madrone, California bay, red alder, and willows.

Redwood Creek provides important migratory, spawning, and rearing habitat for anadromous salmonids. It also provides suitable breeding and foraging habitat for amphibians and reptiles, and is used by mammals for foraging.

Reservoirs

The study area contains two reservoirs that are each approximately 3 acres in surface area. The lower reservoir, which was present at the time of baseline conditions, is located in the center of the study area. The upper reservoir is part of the proposed project and is located in the northern corner of the study area. Both reservoirs are used for storing water for irrigation purposes. The lower reservoir also is used for recreation purposes.

Lower Reservoir

The lower reservoir is an onstream reservoir that was constructed around 1969 and collects water from three of the unnamed tributaries (Tributaries 1, 2, and 3) in addition to direct precipitation and surface runoff from the surrounding uplands. The onstream reservoir is essentially unvegetated and supports only a small patch (approximately 10 feet long) of narrowleaf cattails (*Typha angustifolia*) along the northern edge. The onstream reservoir is ringed with small, scattered weeping willows (*Salix babylonica*) that are nonnative and have been planted for landscaping purposes and occur adjacent to a gravel footpath that rings the reservoir.

During the September 12, 2011, site visit, a large population of American bullfrogs, mosquitofish (*Gambusia affinis*), western pond turtles (*Emys marmorata*), and large unidentified fish were observed. Hundreds of dead bullfrog tadpoles were observed floating on the surface of the reservoir at this time.

Upper Reservoir

The upper reservoir is an offstream reservoir that was constructed in 2001 and collects water that is pumped from POD 1 in addition to direct precipitation, surface runoff from the surrounding uplands, and groundwater. The upper reservoir is entirely unvegetated, and its banks and bottom are lined with thick plastic. During the September 12, 2011, site visit, the reservoir was observed to have bluish-green water, a result of the use of both AB Aquashade (to reduce the penetration of sunlight into the water, thus reducing algae growth) and AB Cutrine Plus (to kill or reduce the algae growth).

No aquatic life was observed in the upper reservoir, and it is not suitable for aquatic wildlife because of the lack of vegetation that could provide cover and foraging opportunities, the presence of the thick plastic on the banks and shoreline that limit animals from entering and exiting the reservoir, and the presence of herbicides in the water.

Vineyards

Areas mapped as vineyards also include infrastructure (e.g., outbuildings, unpaved access roads, winery facilities). Vineyards encompass approximately 151 acres of the study area; 112 acres of vineyard represent baseline conditions, and 39 acres of vineyard were established for the proposed project. Thirty-two of the 39 acres were previously cleared and graded in the 1970's and planted between August 7, 1998, and July 21, 2000; the remaining 7 acres were cleared, graded, and prepared in 2004 and planted in 2005. Vegetation between the rows of vines is extremely sparse and consists primarily of non-native annual grasses with scattered forbs (e.g., California poppy).

Vineyards provide very little habitat for wildlife, with most wildlife use being in the air space above the vines where insectivorous birds and bats likely forage.

Orchards

Orchards occur at the southern end of the study area. Similar to vineyards, orchards provide relatively limited habitat for wildlife, although likely are used by birds and mammals (including bats) for foraging.

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 listed or proposed for listing as threatened or endangered under the ESA (Title 50, CFR, Section 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register (FR) for proposed species).
- Species that are candidates for possible future listing as threatened or endangered under the ESA (75 FR 69222, November 10, 2010).
- Species that are listed or proposed for listing by the State of California as threatened or endangered under CESA (Title 14, California Code of Regulations (CCR), Section 670.5).
- Plants listed as rare under the CNPPA (California Fish and Game Code, Section 1900 et seq.).
- Plants considered by DFG and CNPS to be "rare, threatened, or endangered in California" (Rare Plant Ranks 1B and 2; California Department of Fish and Game 2010; California Native Plant Society 2011).

- Plants identified by DFG and CNPS about which more information is needed to determine their status, and plants of limited distribution (Rare Plant Ranks 3 and 4, California Department of Fish and Game 2010; California Native Plant Society 2011), which may be included as special-status species on the basis of local significance or recent biological information.
- Species that meet the definition of *rare* or *endangered* under the State CEQA Guidelines, Section 15380.
- Animals fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).
- Animal species of special concern to DFG (California Department of Fish and Game 2011a).

The ICF biologists observed one special-status wildlife species, the western pond turtle, during the reconnaissance-level surveys on September 12, 2011. No special-status plants were observed during the reconnaissance-level surveys described above; however, no directed surveys for special-status species have been conducted in the study area.

Special-Status Plants

Table 6 lists the 74 special-status plant species that were identified by the USFWS list for the Mount Saint Helena USGS 7.5-minute quadrangle and the queries of CNDDDB and CNPS for the Mount Saint Helena USGS 7.5-minute quadrangle and the

Table 6. Special-Status Plants Identified as Occurring in the Project Vicinity

Common and Scientific Name	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Floristic Province Subregion ¹⁸	Habitat Requirements	Reported Blooming Period	Potential for Occurrence in Study Area
Napa false indigo <i>Amorpha californica</i> var. <i>napensis</i>	-/-/1B.2	Monterey, Marin, Napa, and Sonoma Counties	Openings in broadleaved upland forest, cismontane woodland, chaparral; 120–2,000 meters	Apr–Jul	Moderate; potential habitat present in chaparral and mixed oak forest and nearest occurrence is <1 mile away.
Bent-flowered fiddleneck <i>Amsinckia lunaris</i>	-/-/1B.2	Inner North Coast Ranges, San Francisco Bay Area, west-central Great Valley	Coastal bluff scrub, valley and foothill grasslands, cismontane woodlands; 3–500 meters	Mar–Jun	Low; potential habitat present in mixed oak forest and grassland but no occurrences within 5 miles.
Slender silver moss <i>Anomobryum</i> <i>julaceum</i>	-/-/2.2	Scattered occurrences in California from Humboldt and Shasta south to Los Angeles Counties; Oregon and elsewhere	On damp rock and soil on outcrops, usually on roadcuts in broadleaved upland forest, lower montane coniferous forest, North Coast coniferous forest; 100–1,000 meters	N/A	Low; potential habitat in mixed oak forest, but suitable microhabitat (substrates) may not be present and no occurrences within 5 miles.
Baker's manzanita <i>Arctostaphylos</i> <i>bakeri</i> ssp. <i>bakeri</i>	-/R/1B.1	Sonoma County, between Occidental and Camp Meeker	Often on serpentine in broadleaved upland forest or chaparral; 75–300 meters	Feb–Apr	Low; potential habitat present in chaparral and mixed oak forest, but suitable microhabitat (serpentine) may not be present and no occurrences within 5 miles.
Sonoma canescent manzanita <i>Arctostaphylos</i> <i>canescens</i> ssp. <i>sonomensis</i>	-/-/1B.2	Western Klamath Ranges, North Coast Ranges: Humboldt, Lake, Mendocino, Sonoma, Tehama, and Trinity Counties	Sometimes on serpentine in chaparral or lower montane coniferous forest; 180–1,675 meters	Jan–Jun	Low; potential habitat present in chaparral and mixed oak forest but suitable microhabitat (serpentine) may or may not be present and no occurrences within 5 miles.
Konocti manzanita <i>Arctostaphylos</i> <i>manzanita</i> ssp. <i>elegans</i>	-/-/1B.3	Colusa, Glenn, Lake, Mendocino, Napa, Sonoma, and Tehama Counties	Volcanic soils in chaparral, cismontane woodland, and lower montane coniferous forest; 395– 1,615 meters	Mar–May	Moderate; potential habitat present in chaparral and mixed oak forest, but suitable microhabitat (volcanic soils) may not be present. Nearest occurrence is <1 mi. away.

¹⁸Floristic provinces as defined in Hickman 1993.

Table 6. Continued

Common and Scientific Name	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Floristic Province Subregion ¹⁸	Habitat Requirements	Reported Blooming Period	Potential for Occurrence in Study Area
Rincon Ridge manzanita <i>Arctostaphylos standfordiana</i> ssp. <i>decumbens</i>	-/-/1B.1	Rincon Ridge, near Santa Rosa, endemic to Sonoma County	Highly restricted to red rhyolitic soils in open areas of chaparral, cismontane woodland; 75–370 meters	Feb–Apr (uncommonly May)	Low; potential habitat present in chaparral and mixed oak forest, but species' range is extremely limited, and suitable microhabitat (rhyolite) may not be present and no occurrences within 5 miles.
Clara Hunt's milk-vetch <i>Astragalus claranus</i>	E/T/1B.1	Southern portion of the North Coast Ranges: endemic to Napa and Sonoma Counties	Serpentine, volcanic, rocky, or clay soils in chaparral openings, cismontane woodland, valley and foothill grassland; 75–275 meters	Mar–May	Low; potential habitat present in chaparral, mixed oak forest, and grassland, but suitable microhabitat (soil types) may not be present and no occurrences within 5 miles.
Jepson's milk-vetch <i>Astragalus rattanii</i> var. <i>jepsonianus</i>	-/-/1B.2	Southern Inner North Coast Range: Colusa, Glenn, Lake, Mendocino, Napa, Tehama, and Yolo Counties	Often on serpentine soils in chaparral, cismontane woodland, valley and foothill grassland; 320–700 meters	Mar–Jun	Low; potential habitat present in chaparral, mixed oak forest, and grassland, but suitable microhabitat (serpentine) may not be present and no occurrences within 5 miles.
Sonoma sunshine <i>Blennosperma bakeri</i>	E/E/1B.1	Endemic to Sonoma County	Vernal pools, mesic valley and foothill grassland; 10–110 meters	Mar–May	No vernal pools or swales present and occurs at elevations substantially lower than the study area.
Narrow-anthered California brodiaea <i>Brodiaea californica</i> var. <i>leptandra</i>	-/-/1B.2	Lake, Napa, and Sonoma Counties	Broadleafed upland forest, chaparral, lower montane coniferous forest; 110–915 meters	May–Jul	Moderate; potential habitat present in chaparral and mixed oak woodland and nearest occurrence is <1 mile away.
Indian Valley brodiaea <i>Brodiaea coronaria</i> ssp. <i>rosea</i>	-/E/1B.1	Inner North Coast Ranges: Colusa, Glenn, Lake, and Tehama Counties	Serpentine soils in closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland; 335–1,450 meters	May–Jun	Low; potential habitat present in chaparral and mixed oak forest, but suitable microhabitat (serpentine) may not be present and no occurrences within 5 miles.

Table 6. Continued

Common and Scientific Name	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Floristic Province Subregion ¹⁸	Habitat Requirements	Reported Blooming Period	Potential for Occurrence in Study Area
Coastal bluff morning-glory <i>Calystegia purpurata</i> ssp. <i>saxicola</i>	-/-/1B.2	North Coast with occurrences in Contra Costa, Lake, Marin, Mendocino, and Sonoma Counties	Coastal dunes, coastal scrub, North Coast coniferous forest; 10– 105 meters	May–Sep	No potential habitat present.
Rincon Ridge ceanothus <i>Ceanothus confusus</i>	-/-/1B.1	Inner North Coast Ranges in Lake, Mendocino, Napa, and Sonoma Counties	Volcanic or serpentine soils in closed-cone coniferous forest, chaparral, and cismontane woodland; 75–1,065 meters	Feb–Jun	Moderate; potential habitat present in chaparral and mixed oak forest, but suitable microhabitat (soil types) may not be present. Nearest occurrence is <5 miles away.
Calistoga ceanothus <i>Ceanothus divergens</i>	-/-/1B.2	North Coast Ranges, Lake, Napa, and Sonoma Counties	Rocky areas in chaparral on serpentine or volcanic soils; 170– 950 meters	Feb–Apr	Moderate; potential habitat present in chaparral, but suitable microhabitat (soil types) may not be present. Nearest occurrence is >1 mi. away.
Sonoma ceanothus <i>Ceanothus sonomensis</i>	-/-/1B.2	Outer North Coast Ranges, Hood Mountain Range: Napa and Sonoma Counties	Chaparral on sandy, serpentinite, or volcanic soils; 215–800 meters	Feb–Apr	Low; potential habitat present in chaparral, but suitable microhabitat (soil types) may not be present and no occurrences within 5 miles.
Pappose tarplant <i>Centromadia parryi</i> ssp. <i>parryi</i>	-/-/1B.2	North and Central Coast Ranges, the southern Sacramento Valley; occurrences in Butte, Colusa, Glenn, Lake, Napa, San Mateo, and Solano Counties	Coastal prairie, meadows and seeps, coastal salt marshes and swamps, alkaline soils in vernal mesic valley and foothill grassland; 2–420 meters	May–Nov	Moderate; potential habitat present in grasslands and wet meadows, but suitable microhabitat (alkaline soils) may not be present. Nearest occurrence is <5 miles away.
Dwarf soaproot <i>Chlorogalum pomeridianum</i> var. <i>minus</i>	-/-/1B.2	Widely disjunct populations in Tehama, Colusa, Lake, Sonoma, and San Luis Obispo Counties	Openings in chaparral, valley and foothill grasslands; on serpentinite outcrops; 305–1,000 meters	May–Aug	Low; potential habitat present in chaparral and grassland, but suitable microhabitat (serpentine outcrops) may not be present and no occurrences within 5 miles.
Pennell's bird's- beak <i>Cordylanthus tenuis</i> ssp. <i>capillaris</i>	E/R/1B.2	Endemic to Sonoma County	Serpentinite soils in closed-cone coniferous forest and chaparral; 45–305 meters	Jun–Sep	Low; potential habitat present in chaparral, but suitable microhabitat (serpentine) may not be present and no occurrences within 5 miles.

Table 6. Continued

Common and Scientific Name	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Floristic Province Subregion ¹⁸	Habitat Requirements	Reported Blooming Period	Potential for Occurrence in Study Area
Serpentine cryptantha <i>Cryptantha dissita</i>	-/-/1B.1	Inner North Coast Ranges in Lake, Mendocino, Napa, and Sonoma Counties	Chaparral on serpentinite; 395– 580 meters	Apr–Jun	Low; potential habitat present in chaparral, but suitable microhabitat (serpentine) may not be present and no occurrences within 5 miles.
Geysers dichantherium <i>Dichantherium lanuginosum</i> var. <i>thermale</i>	-/E/1B.1	Endemic to Sonoma County, Big Sulphur Creek, currently known from 9 occurrences	On geothermally altered soils around the vicinity of hot springs in closed-cone coniferous forest, riparian forest, valley and foothill grassland; 305–825 meters	Jun–Aug	No potential habitat present.
Dwarf downingia <i>Downingia pusilla</i>	-/-/2.2	Central Valley	Vernal pools and mesic valley and foothill grasslands; below 445 meters	Mar–May	No potential habitat present.
Brandegee's eriastrum <i>Eriastrum brandegeae</i>	-/-/1B.2	Inner North Coast Ranges to East San Francisco Bay area in Contra Costa(?), Colusa, Glenn, Lake, Santa Clara, Shasta, San Mateo, Tehama, and Trinity Counties	On volcanic substrate in chaparral, oak woodland; 305–1,030 meters	Apr–Aug	Low; potential habitat present in chaparral and mixed oak forest, but suitable microhabitat (volcanic soils) may not be present and no occurrences within 5 miles.
Greene's narrow- leaved daisy <i>Erigeron greenei</i>	-/-/1B.2	Scattered occurrences in Lake, Napa, and Sonoma Counties	Chaparral on serpentinite or volcanic substrates; 80–1,005 meters	May–Sep	Moderate; potential habitat present in chaparral, but suitable microhabitat (soil types) may not be present. Nearest occurrence is <5 mi. away.
Serpentine daisy <i>Erigeron serpentinus</i>	-/-/1B.3	The Cedars, Sonoma County	Seeps in serpentine chaparral; 60– 670 meters	May–Aug	Low; potential habitat present in chaparral, but suitable microhabitat (serpentine, seeps) may not be present and no occurrences within 5 miles.
Snow Mountain buckwheat <i>Eriogonum nervulosum</i>	-/-/1B.2	North Coast Ranges, from Colusa to Yolo Counties	Serpentine chaparral; 300–2,105 meters	Jun–Sep	Moderate; potential habitat present in chaparral, but suitable microhabitat (serpentine) may not be present. Nearest occurrence is <5 mi. away.

Table 6. Continued

Common and Scientific Name	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Floristic Province Subregion ¹⁸	Habitat Requirements	Reported Blooming Period	Potential for Occurrence in Study Area
Loch Lomond button-celery <i>Eryngium constancei</i>	E/E/1B.1	Lake, Napa, and Sonoma Counties: Loch Lomond and Diamond Mountain	Volcanic ash flow vernal pools; 460–855 meters	Apr–Jun	No potential habitat present.
Tuolumne button- celery <i>Eryngium pinnatisectum</i>	–/–/1B.2	Amador, Calaveras, Sacramento, Sonoma, and Tuolumne Counties	Vernal pools and moist areas in cismontane woodland and lower montane coniferous forest; 70–915 meters	May–Aug	Low; potential habitat in wet meadows but no occurrences within 5 miles.
Adobe-lily <i>Fritillaria pluriflora</i>	–/–/1B.2	Northern Sierra Nevada Foothills, Inner North Coast Ranges, edges of Sacramento Valley	Chaparral, cismontane woodland, valley and foothill grassland, often on adobe soils; 60–705 meters	Feb–Apr	Low; potential habitat present in chaparral, but suitable microhabitat (adobe clay) may not be present and no occurrences within 5 miles.
Boggs Lake hedge- hyssop <i>Gratiola heterosepala</i>	–/E/1B.2	Inner North Coast Ranges, Central Sierra Nevada Foothills, Sacramento Valley and Modoc Plateau: Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, and Tehama Counties; also Oregon	Clay soils in areas of shallow water, lake margins of swamps and marshes, vernal pool margins; 10–2,375 meters	Apr–Aug	No potential habitat present.
Hall's harmonia <i>Harmonia hallii</i>	–/–/1B.2	Inner North Coast Ranges in Colusa, Lake, Napa, and Yolo Counties	Chaparral on serpentinite; 500– 975 meters	Apr–Jun	Low; potential habitat present in chaparral, but suitable microhabitat (serpentine) may not be present and no occurrences within 5 miles.
Pale yellow hayfield tarplant <i>Hemizonia congesta ssp. congesta</i>	–/–/1B.2	Mendocino, Marin, San Francisco, San Mateo, Sonoma Counties	Valley and foothill grassland, sometimes roadsides; 20–560 meters	Apr–Nov	Low; potential habitat in grassland but no occurrences within 5 miles.
Glandular western flax <i>Hesperolinon adenophyllum</i>	–/–/1B.2	North Coast Ranges: Humboldt*, Lake, and Mendocino Counties	Mixed chaparral, cismontane woodland, valley and foothill grassland usually on soils derived from serpentinite; 150–1,315 meters	May–Aug	Low; potential habitat present in chaparral, mixed oak forest, and grassland, but suitable microhabitat (serpentine) may not be present and no occurrences within 5 miles.

Table 6. Continued

Common and Scientific Name	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Floristic Province Subregion ¹⁸	Habitat Requirements	Reported Blooming Period	Potential for Occurrence in Study Area
Two-carpellate western flax <i>Hesperolinon bicarpellatum</i>	-/-/1B.2	Lake, Napa, and Sonoma Counties	Serpentine chaparral; 60–1,005 meters	May–Jul	Moderate; potential habitat present in chaparral, but suitable microhabitat (serpentine) may not be present. Known occurrence overlaps with study area but CNDDDB mapping is non-specific.
Lake County western flax <i>Hesperolinon didymocarpum</i>	-/E/1B.2	Inner North Coast Ranges, Lake County	On serpentinite in chaparral, cismontane woodland, valley and foothill grassland; 330–365 meters	May–Jul	Low; potential habitat present in chaparral, mixed oak forest, and grassland, but suitable microhabitat (serpentine) may not be present and no occurrences within 5 miles.
Napa western flax <i>Hesperolinon serpentinum</i>	-/-/1B.1	Alameda, Lake, Napa, and Stanislaus Counties	Chaparral on serpentinite; 50–800 meters	May–Jul	Low; potential habitat present in chaparral, but suitable microhabitat (serpentine) may not be present and no occurrences within 5 miles.
Bolander's horkelia <i>Horkelia bolanderi</i>	-/-/1B.2	Interior North Coast Ranges, Colusa*, Lake, and Mendocino Counties	Edges of vernal mesic areas in chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland; 450–1,100 meters	Jun–Aug	Low; potential habitat in wet meadows but no occurrences within 5 miles.
California satintail <i>Imperata brevifolia</i>	-/-/2.1	Butte, Fresno, Imperial, Inyo, Kern, Lake*, Los Angeles, Orange, Riverside, San Bernardino, Tehama, Tulare, Ventura Counties; Arizona, Baja California–Mexico, New Mexico*, Nevada, Texas, Utah	Mesic sites in chaparral, coastal scrub, Mojave desert scrub, meadows and seeps (often alkali), riparian scrub; 0–1,215 meters	Sep–May	Low; potential habitat in chaparral and wet meadows, but microhabitat (mesic areas, alkali conditions) may not be present and no occurrences within 5 miles.
Santa Lucia dwarf rush <i>Juncus luciensis</i>	-/-/1B.2	Lassen, Monterey, Modoc, Napa, Nevada, Placer, Plumas, Riverside, Santa Barbara, San Benito, San Diego, Shasta, San Luis Obispo Counties	Chaparral, Great Basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools; 300–2,040 meters	Apr–Jul	Low; potential habitat in chaparral and wet meadows but no occurrences within 5 miles.
Burke's goldfields <i>Lasthenia burkei</i>	E/E/1B.1	Lake, Mendocino, and Sonoma Counties	Wet meadows and seeps, vernal pools; 15–600 meters	Apr–Jun	Moderate; potential habitat in wet meadows and nearest occurrence is <5 mi. away.

Table 6. Continued

Common and Scientific Name	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Floristic Province Subregion ¹⁸	Habitat Requirements	Reported Blooming Period	Potential for Occurrence in Study Area
Contra Costa goldfields <i>Lasthenia conjugens</i>	E-/1B.1	Scattered occurrences in Coast Range valleys and southwest edge of Sacramento Valley, Alameda, Contra Costa, Mendocino*, Monterey, Marin, Napa, Santa Barbara*, Santa Clara*, Solano and Sonoma Counties	Wet areas in cismontane woodland, valley and foothill grassland, vernal pools, alkaline playas or saline vernal pools and swales; below 470 meters	Mar–Jun	Low; potential habitat in wet meadows but no occurrences within 5 miles.
Colusa layia <i>Layia septentrionalis</i>	-/-1B.2	Inner North Coast Range: Colusa, Glenn, Lake, Mendocino, Napa, Sonoma, Sutter, Tehama, and Yolo Counties	Sandy or serpentinite soils in grasslands and openings in chaparral and foothill woodlands; 100–1,095 meters	Apr–May	Moderate; potential habitat present in chaparral, but suitable microhabitat (soils) may not be present. Nearest occurrence is <5 mi. away.
Legenere <i>Legenere limosa</i>	-/-1B.1	Primarily in the lower Sacramento Valley, also from North Coast Ranges, northern San Joaquin Valley and the Santa Cruz Mountains	Deep, seasonally wet habitats such as vernal pools, ditches, marsh edges, and riverbanks; below 880 meters	Apr–Jun	Low; potential habitat present along in Kellogg Creek and unnamed tributaries but microhabitat may not be present and no occurrences within 5 miles.
Jepson’s leptosiphon <i>Leptosiphon jepsonii</i>	-/-1B.2	Lake, Napa, Sonoma Counties	Usually volcanic substrates in chaparral, cismontane woodland; 100–500 meters	Mar–May	Moderate; potential habitat present in chaparral and mixed oak forest, and nearest occurrence abuts project area.
Sebastopol meadowfoam <i>Limnanthes vinculans</i>	E/E/1B.1	Napa(?) and Sonoma Counties	Vernal pools, vernal mesic grasslands and wet meadows; 15–305 meters	Apr–May	Low; potential habitat in wet meadows but no occurrences within 5 miles.
Cobb Mountain lupine <i>Lupinus sericatus</i>	-/-1B.2	Inner North Coast Ranges in Colusa, Lake, Napa, and Sonoma Counties	In knobcone pine–oak woodland, chaparral, broadleafed upland forest, cismontane woodland, lower montane coniferous forest, on open wooded slopes in gravelly soils; 275–1,525 meters	Mar–Jun	High; potential habitat in mixed oak forest and chaparral and gravelly soils present. Known occurrence <2 mi. away.
Oregon lungwort <i>Mertensia bella</i>	-/-2.2	Siskiyou County; Idaho, Oregon	Wet areas in meadows and seeps, upper montane coniferous forest; 1,500–2,000 meters	May–Jul	Unlikely; occurs at elevations substantially higher than the study area.

Table 6. Continued

Common and Scientific Name	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Floristic Province Subregion ¹⁸	Habitat Requirements	Reported Blooming Period	Potential for Occurrence in Study Area
Marsh microseris <i>Microseris paludosa</i>	-/-/1B.2	Coastal California from Mendocino County to San Luis Obispo County	Grassland, coastal scrub, closed-cone coniferous forest, cismontane woodland; 5–300 meters	Apr–Jun (uncommonly Jul)	Moderate; potential habitat in grassland and mixed oak forest and occurs <5 mi. away.
Elongate copper moss <i>Mielichhoferia elongata</i>	-/-/2.2	Sierra Nevada from Nevada County to Fresno County; Coast Ranges from Humboldt County to Santa Cruz County; elsewhere	Cismontane woodland, in vernal moist areas, metamorphic rock; 500–1,300 meters	N/A	Low; potential habitat present in mixed oak forest, but suitable microhabitat (vernal moist areas, metamorphic rock) may not be present and no occurrences within 5 miles.
Robust monardella <i>Monardella villosa</i> ssp. <i>globosa</i>	-/-/1B.2	North Coast Ranges and Eastern San Francisco Bay Area: Alameda, Contra Costa, Humboldt, Lake, Mendocino, Napa, Santa Clara, Santa Cruz, San Mateo, and Sonoma Counties	Grassy openings in broadleafed upland forest and chaparral, cismontane woodland, coastal scrub, valley and foothill grassland; 100–915 meters	Jun–Jul (uncommonly Aug)	Low; potential habitat in mixed oak forest, chaparral, and grassland but no occurrences within 5 miles.
Baker's navarretia <i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	-/-/1B.1	Inner North Coast Range, western Sacramento Valley: Colusa, Glenn, Lake, Mendocino, Marin, Napa, Solano, Sonoma, Tehama, and Yolo Counties	Vernal pools and swales in woodland, lower montane coniferous forest, mesic meadows, and grassland; 5–1,740 meters	Apr–Jul	Low; potential habitat in wet meadows but no occurrences within 5 miles.
Few-flowered navarretia <i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	E/T/1B.1	Lake and Napa Counties	Volcanic ash, mud flow vernal pools; 400–855 meters	May–Jun	No potential habitat present.
Many-flowered navarretia <i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	E/E/1B.2	Lake and Sonoma Counties	Volcanic ash, mud flow vernal pools; 30–950 meters	May–Jun	No potential habitat present.
Small pincushion navarretia <i>Navarretia myersii</i> ssp. <i>deminuta</i>	-/-/1B.1	Known from a single occurrence in Long Valley, Lake County	Clay loam soils in vernal pools; 355 meters	Apr–May	No potential habitat present.

Table 6. Continued

Common and Scientific Name	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Floristic Province Subregion ¹⁸	Habitat Requirements	Reported Blooming Period	Potential for Occurrence in Study Area
Slender Orcutt grass <i>Orcuttia tenuis</i>	T/E/1B.1	Sierra Nevada and Cascade Range foothills from Siskiyou to Sacramento Counties	Vernal pools; 35–1,760 meters	May–Sep (Oct)	No potential habitat present.
Sonoma beardtongue Penstemon <i>newberryi</i> var. <i>sonomensis</i>	–/–/1B.3	Lake, Napa, and Sonoma Counties	Rocky areas in chaparral; 700– 1,370 meters	Apr–Aug	Moderate; potential habitat present in chaparral, and nearest occurrence is <2 mi. away.
Calistoga popcorn- flower <i>Plagiobothrys</i> <i>strictus</i>	E/T/1B.1	Napa County, near Calistoga	Alkaline areas near thermal springs; 90–160 meters	Mar–Jun	No potential habitat present.
Napa blue grass <i>Poa napensis</i>	E/E/1B.1	Napa County, near Calistoga	Alkaline areas near thermal springs; 100–200 meters	May–Aug	No potential habitat present.
Lake County stonecrop <i>Sedella leiocarpa</i> (federally and state- listed as <i>Parvisedum</i> <i>leiocarpum</i>)	E/E/1B.1	Known from fewer than 10 occurrences in Lake County	Vernally mesic depressions on volcanic outcrops in cismontane woodland, valley and foothill grassland, vernal pools; 365–790 meters	Apr–May	Low; potential habitat present in mixed oak forest and grassland but no occurrences within 5 miles.
Napa checkerbloom <i>Sidalcea hickmanii</i> ssp. <i>napensis</i>	–/–/1B.1	Napa County	Rhyolitic substrates in chaparral; 415–610 meters	Apr–Jun	Low; potential habitat present in chaparral, but suitable microhabitat (soils) may not be present but no occurrences within 5 miles.
Marsh checkerbloom <i>Sidalcea oregana</i> ssp. <i>hydrophila</i>	–/–/1B.2	Inner North Coast Ranges: Glenn, Lake, Mendocino, and Napa Counties	Meadows and moist areas in perennial grassland, riparian forest; 1,100–2,300 meters	Jul–Aug	Moderate; potential habitat in wet meadows and riparian areas. Nearest occurrence is <5 mi. away.
Kenwood Marsh checkerbloom <i>Sidalcea oregana</i> ssp. <i>valida</i>	E/E/1B.1	Known from only two occurrences in Sonoma County.	Freshwater marshes and swamps; 115–150 meters	Jun–Sep	No potential habitat present and occurs at elevations substantially lower than the study area. Nearest occurrence is ~2.5 mi. away.

Table 6. Continued

Common and Scientific Name	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Floristic Province Subregion ¹⁸	Habitat Requirements	Reported Blooming Period	Potential for Occurrence in Study Area
Tamalpais jewel-flower <i>Streptanthus batrachopus</i>	-/-/1B.3	Lake County and Marin County: Mount Tamalpais	Serpentinite soils in closed-cone coniferous forest and chaparral; 305–650 meters	Apr–Jul	Low; potential habitat present in chaparral, but suitable microhabitat (serpentine) may not be present and no occurrences within 5 miles.
Socrates Mine jewel-flower <i>Streptanthus brachiatus</i> ssp. <i>brachiatus</i>	-/-/1B.2	Napa and Sonoma Counties	Chaparral, cypress forest, usually on serpentinite; 545–1,000 meters	May–Jun	Moderate; potential habitat present in chaparral, but suitable microhabitat (serpentine) may not be present. Nearest occurrence is <5 mi. away.
Freed’s jewel-flower <i>Streptanthus brachiatus</i> ssp. <i>hoffmanii</i>	-/-/1B.2	Lake and Sonoma Counties	On serpentinite in chaparral and cismontane woodland; 490–1,220 meters	May–Jul	Moderate; potential habitat present in chaparral and mixed oak forest, but suitable microhabitat (serpentine) may not be present. Nearest occurrence is <5 mi. away.
Green jewel-flower <i>Streptanthus hesperidus</i>	-/-/1B.2	Glenn, Lake, Napa, and Sonoma Counties	On serpentinite or rocky soils in cismontane woodland and openings in chaparral; 130–760 meters	May–Jul	Moderate; potential habitat present in chaparral and mixed oak forest, but suitable microhabitat (serpentine) may not be present. Nearest occurrence is >1 mi. away.
Three Peaks jewel- flower <i>Streptanthus morrisonii</i> ssp. <i>elatus</i>	-/-/1B.2	Lake, Napa, and Sonoma Counties	Chaparral on serpentinite; 90–815 meters	Jun–Sep	Low; potential habitat present in chaparral, but suitable microhabitat (serpentine) may not be present and no occurrences within 5 miles.
Kruckeberg’s jewel- flower <i>Streptanthus morrisonii</i> ssp. <i>kruckebergii</i>	-/-/1B.2	Lake, Napa, and Sonoma Counties	Cismontane woodland on serpentinite; 215–1,035 meters	Apr–Jul	Low; potential habitat present in mixed oak forest, but suitable microhabitat (serpentine) may not be present and no occurrences within 5 miles.

Table 6. Continued

Common and Scientific Name	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Floristic Province Subregion ¹⁸	Habitat Requirements	Reported Blooming Period	Potential for Occurrence in Study Area
Morrison's jewel-flower <i>Streptanthus morrisonii</i> ssp. <i>morrisonii</i>	-/-/1B.2	Endemic to Sonoma County	Chaparral on serpentine, talus, and rocky substrates; 120–585 meters	May–Sep	Moderate; potential habitat present in chaparral, but suitable microhabitat (substrates) may not be present. Nearest occurrence is <5 mi. away.
Early jewel-flower <i>Streptanthus vernalis</i>	-/-/1B.2	Known only from Lake County	On serpentinite in closed-cone coniferous forest, chaparral; 610 meters	Mar–May	Low; potential habitat present in chaparral, but suitable microhabitat (serpentine) may not be present and occurs at elevations substantially higher than the project area and no occurrences within 5 miles.
Slender-leaved pondweed <i>Stuckenia filiformis</i>	-/-/2.2	Scattered locations in California: Contra Costa, El Dorado, Lassen, Merced, Mono, Modoc, Mariposa, Placer, Santa Clara*, and Sierra Counties; Arizona, Nevada, Oregon, Washington	Shallow freshwater marshes and swamps; 300–2,150 meters	May–Jul	No potential habitat in reservoirs and CNDDDB occurrence that overlaps with southern end of study area is a non-specific location mapped by CNDDDB as best guess.
Napa bluecurls <i>Trichostema ruygtii</i>	-/-/1B.2	Lake(?), Napa, and Solano Counties	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, vernal pools; 30–680 meters	Jun–Oct	Low; potential habitat present in chaparral, mixed oak forest, and grassland but no occurrences within 5 miles.
Saline clover <i>Trifolium hydrophilum</i>	-/-/1B.2	Sacramento Valley, central western California	Salt marsh, mesic alkaline areas in valley and foothill grasslands, vernal pools, marshes and swamps; below 300 meters	Apr–Jun	No potential habitat present and occurs at elevations substantially lower than the project area.
Oval-leaved viburnum <i>Viburnum ellipticum</i>	-/-/2.3	Northwest California, San Francisco Bay Area, north and central Sierra Nevada Foothills: Contra Costa, El Dorado, Fresno, Glenn, Humboldt, Mendocino, Napa, Placer, Shasta, Sonoma, and Tehama Counties; also Oregon, Washington	Chaparral, cismontane woodland, and lower montane coniferous forest; 215–1,400 meters	May–Jun	Moderate; potential habitat present in mixed oak woodland and chaparral and occurs <5 mi. away.

Table 6. Continued

^a Status explanations:

Federal

- E = listed as endangered under the federal Endangered Species Act.
- T = listed as threatened under the federal Endangered Species Act.
- = no listing.

State

- E = listed as endangered under the California Endangered Species Act.
- R = listed as rare under the California Native Plant Protection Act (this category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation).
- = no listing.

California Rare Plant Rank¹⁹

- 1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
 - 2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.
 - 0.1 = seriously endangered in California.
 - 0.2 = fairly endangered in California.
 - 0.3 = not very endangered in California
 - * = presumed extirpated from that county.
 - ? = occurrence within county needs to be confirmed
-

¹⁹ In March, 2010, DFG changed the name of “CNPS List” or “CNPS Ranks” to “California Rare Plant Rank” (or CRPR). This was done to reduce confusion over the fact that CNPS and DFG jointly manage the Rare Plant Status Review groups (300+ botanical experts from government, academia, nongovernment organizations, and the private sector) and that the rank assignments are the product of a collaborative effort and not solely a CNPS assignment.

surrounding eight quadrangles. The table contains the status, geographic distribution, habitat requirements, reported blooming period, and potential for occurrence assessments for each of the 74 species. The mixed oak forest, chaparral, wet meadows, annual grassland, unnamed tributaries, and Kellogg Creek represent potential habitat for special-status plants in the study area.

The study area does not contain potential habitat and/or is substantially outside the elevation range of 16 of the 74 special-status plant species. One species, Cobb Mountain lupine (*Lupinus sericatus*) was identified as having high potential to occur in the study area because potential habitat (mixed oak forest and chaparral) and microhabitat (gravelly soils) are present and the nearest occurrence is less than 2 miles away. Twenty of the 74 species were identified as having moderate potential to occur in the study area because potential habitat is present, but potential microhabitat (e.g., substrate types) may not be present and there are known occurrences within 5 miles of the study area. Thirty-seven of the 74 species were identified as having low potential to occur in the study area because potential habitat (e.g., mixed oak forest, chaparral) is present, but potential microhabitat (e.g., substrate types) may not be present and there are no known occurrences within 5 miles of the study area.

The CNDDDB identified three special-status plant occurrences that either abut or overlap the study area: two-carpellate western flax (*Hesperolinon bicarpellatum*), Jepson's leptosiphon (*Leptosiphon jepsonii*), and slender-leaved pondweed (*Stuckenia filiformis*). The CNDDDB occurrence (#9) of two-carpellate western flax that overlaps the northeastern edge of the study area occurs at the edge of chaparral and is mapped as a non-specific location with a 1-mile radius based on a 1979 collection. The CNDDDB occurrence (#33) of Jepson's leptosiphon that abuts the study area is located on open, grassy slopes and is mapped as a specific location within an 80-meter radius based on observations in 2004. The CNDDDB occurrence (#18) of slender-leaved pondweed that overlaps the southwestern portion of the study area occurs in dense vegetation in a pond that is presumed by CNDDDB to be one of the ponds that are located east of the intersection of State Route 128 and Ida Clayton Road. The location of this CNDDDB occurrence of slender-leaved pondweed is a non-specific point that represents CNDDDB's best guess for the occurrence because the herbarium specimen indicates that the collection was made in a location north of the study area. (California Natural Diversity Database 2011.)

Special-Status Wildlife

As shown in Table 7, 27 wildlife species were evaluated for their potential to occur in the study area. The species listed in this table come from the USFWS list for the Mount Saint Helena quadrangle and the query of the CNDDDB for the Mount Saint Helena and surrounding eight quadrangles. This table provides summaries of the status of those species, distributions, preferred habitats, and brief evaluations of their potential for occurrence in the study area. One of the special-status species, the western pond turtle, was observed in the study area. Seven species were identified as having a moderate to high potential to occur in the study area. Most of the bat species in the table and

Table 7. Special-Status Fish and Wildlife Species

Common and Scientific Names	Status ^a Federal/State	Distribution	Preferred Habitats	Potential for Occurrence in the Study area
Invertebrates				
Ricksecker's water scavenger beetle <i>Hydrochara rickseckeri</i>	-/-	Recorded in central coastal California and southern Sacramento Valley	Vernal pools and other aquatic habitats	Low—species is typically found in vernal pools, which are not in the study area. Species has been documented within 10 miles of the study area (CNDDDB 2011).
California linderiella <i>Linderiella occidentalis</i>	-/-	Central Valley and central coastal California	Vernal pools, swales, and other ephemeral wetlands	None—no suitable habitat in the study area. Species has been documented within 10 miles of the study area (CNDDDB 2011).
California freshwater shrimp <i>Syncaris pacifica</i>	E/E	Endemic to Marin, Sonoma, and Napa Counties; currently restricted to lower Russian River drainage, coastal stream flowing westward directly into the Pacific, streams draining into Tomales Bay, and stream flowing southward into northern San Pablo Bay	Historically have been found only at low elevation (less than 380 feet) and in low-gradient (generally less than 1%) streams; preferred habitats include streams 12 to 36 inches deep with exposed live roots of trees along undercut banks greater than 6 inches with overhanging woody debris or stream vegetation	None—no suitable habitat in the study area. The streams in the study area have moderate to high gradients, and study area is outside the known range of the species. The proposed project would not negatively affect any downstream habitat for this species. Species has been documented within 10 miles of the study area (CNDDDB 2011).
Serpentine cypress wood-boring beetle <i>Trachykele hartmani</i>	-/-	Endemic to Lake County	Larvae develop in sergeant cypress; restricted to Napa, Colusa, and Lake Counties	None—there is no suitable habitat for this species in the study area. Species has been documented within 10 miles of the study area (CNDDDB 2011).

Table 7. Continued

Common and Scientific Names	Status ^a Federal/State	Distribution	Preferred Habitats	Potential for Occurrence in the Study area
Fish				
Russian River tule perch <i>Hysterothorax traski</i> <i>pomo</i>	-/SSC	Endemic to the mainstem Russian River and lower reaches of its major tributaries	Occurs in a variety of lowland habitats, including clear streams and rivers, lakes, and estuarine sloughs; in rivers, typically associated with emergent aquatic plants, deep pools, and banks with complex cover; require relatively cool and well-oxygenated water	None—The study area is outside the known range of this species. Species has been documented within 10 miles of the study area (CNDDDB 2011). Species has been documented to occur in lower and middle Maacama Creek (Merritt-Smith Consulting 2003).
Navarro roach <i>Lavinia symmetricus</i> <i>navarroensis</i>	-/SSC	Endemic to the Navarro River drainage	Occurs in a diversity of habitats, from cool headwater streams to small, warm intermittent streams and isolated pools where populations can be dense; tolerant of relatively high temperatures (30–35°C) and low dissolved oxygen levels (1–2 ppm) (Moyle 2002)	None—The study area is outside the known range of this subspecies of California roach.
Hardhead <i>Mylopharodon</i> <i>conocephalus</i>	-/SSC	Russian and Napa Rivers and widely distributed in low- to mid-elevation streams in the Sacramento–San Joaquin River drainage	Low to mid-elevation streams with clear, deep pools and runs with sand-gravel-boulder substrates and slow velocities; also occurs in reservoirs; most often found in streams where summer temperatures exceed 20°C) (Moyle 2002)	Low—The study area generally lacks preferred habitat (slow velocities and relatively warm summer temperatures). Species has been documented within 10 miles of the study area (CNDDDB 2011). Species has been documented to occur in lower Maacama Creek (Merritt-Smith Consulting 2003).

Table 7. Continued

Common and Scientific Names	Status ^a Federal/State	Distribution	Preferred Habitats	Potential for Occurrence in the Study area
Steelhead—Central California Coast DPS <i>Oncorhynchus mykiss irideus</i>	T/-	Below natural and constructed (dams) impassable barriers in California coastal streams from the Russian River (Sonoma and Mendocino Counties) south to and including Aptos Creek in Santa Cruz County, and the drainages flowing into San Francisco, San Pablo, and Suisun Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers; also occurs in streams tributary to Suisun Marsh	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 8.0 to 12.5°C; habitat types are riffles, runs, and pools (Moyle 2002); constructs gravel nests (redds) in pool-tails and head of riffles containing suitably sized gravels relatively free of fine sediment	Present—Juveniles and adults have been observed in Kellogg Creek and juveniles have been observed in Tributary 4.
Steelhead—Central Valley DPS <i>O. mykiss irideus</i>	T/-	Sacramento and San Joaquin Rivers and tributary streams in the Central Valley; juveniles (smolts) and adults migrate through the Sacramento–San Joaquin River Delta and San Pablo, Suisun and San Francisco Bays on their way to (smolts and post-spawning adults) and from (adults) the ocean	Occurs in well-oxygenated, cool, riverine habitat containing riffles, runs, and pools and with water temperatures from 7.8 to 18°C (Moyle 2002); constructs gravel nests (redds) in pool-tails and heads of riffles containing gravel substrates relatively free of fine sediment	None—The study area is outside the known range of this DPS.

Table 7. Continued

Common and Scientific Names	Status ^a Federal/State	Distribution	Preferred Habitats	Potential for Occurrence in the Study area
Coho salmon—Central California Coast <i>O. kisutch</i>	E/E	Central California coastal streams and rivers from Punta Gorda in northern California south to and including the San Lorenzo River in Santa Cruz County, as well as tributaries to San Francisco Bay, excluding the Sacramento–San Joaquin River system	Occurs in well-oxygenated, cool, riverine habitat with maximum weekly temperatures below 18.0°C or maximum weekly average temperatures below 16.5°C (Welsh et al. 2001); juveniles prefer cool, clear, well-oxygenated streams with deep pools (greater than 3 feet), and dense riparian (overhead) and submerged cover (e.g., woody material); during winter, juveniles commonly seek shelter in large mainstream pools, small tributaries, and backwater areas with dense cover; constructs gravel nests (redds) in pool-tails and heads of riffles containing gravel substrates relatively free of fine sediment	High—suitable habitat exists in the study area. Species has been documented within 10 miles of the study area (CNDDDB 2011).
California coastal Chinook salmon <i>O. tshawytscha</i>	T/-	California coastal rivers and streams south of the Klamath River to the Russian River	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 8.0 to 12.5°C; spawns in flowing rivers with gravel substrates (0.25–6.0 inches in size) relatively free from fine sediments; habitat types are riffles, runs, and pools (Moyle 2002)	None—The study area is outside the known range of this species. Species has been documented within 10 miles of the study area (CNDDDB 2011).

Table 7. Continued

Common and Scientific Names	Status ^a Federal/State	Distribution	Preferred Habitats	Potential for Occurrence in the Study area
Amphibians				
California red-legged frog <i>Rana draytonii</i>	T/SSC	Species has been found along the coast and coastal mountain ranges of California from Mendocino County to San Diego County and in the Sierra Nevada from Butte County to Fresno County	Permanent and semipermanent aquatic habitats, such as creeks and ponds, with emergent and submergent vegetation; may aestivate in rodent burrows or cracks during dry periods	Moderate—aquatic habitats in the study area represent potential habitat for this species. Nearest CNDDDB (CNDDDB 2011) record is approximately 12.5 miles southeast of the project site. The lower-gradient streams and ponds represent potential habitat for red-legged frog; however, the presence of bullfrogs and fish make these habitats marginal.
Foothill yellow-legged frog <i>Rana boylei</i>	–/SSC	Occurs in the Klamath, Cascade, north Coast, south Coast, Transverse, and Sierra Nevada Ranges up to approximately 6,000 feet	Creeks or rivers in woodlands or forests with rock and gravel substrate and low overhanging vegetation along the edge; usually found near riffles with rocks and sunny banks nearby	Moderate—species has been documented within 10 miles of the study area (CNDDDB 2011).
Reptiles				
Western pond turtle <i>Emys marmorata</i>	–/SSC	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	Present—species was observed in the lower reservoir in the study area and has been previously documented within approximately 5 miles of the study area (CNDDDB 2011).

Table 7. Continued

Common and Scientific Names	Status ^a Federal/State	Distribution	Preferred Habitats	Potential for Occurrence in the Study area
Birds				
Sharp-shinned hawk <i>Accipiter striatus</i>	-/-	In California, winters throughout the state; known to breed more in the south Coast Range	Found in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffery pine habitats; nests close to water in dense montane forests and woodlands	Moderate—may use the study area as wintering habitat but not likely to nest in study area because of a lack of typical nesting habitat. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).
Golden eagle <i>Aquila chrysaetos</i>	-/ FP	Foothills and mountains throughout California; uncommon nonbreeding visitor to lowlands such as the Central Valley	Nest on cliffs and escarpments or in tall trees overlooking open country; forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals	Moderate—open portions of the study area represent potential foraging habitat for species. Suitable nesting habitat occurs on Mount Saint Helena to the east but not in the study area. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).
Great blue heron <i>Ardea herodias</i> (nesting colonies)	-/-	Found throughout most of California, except in more mountainous areas above foothills	Nests in colonies in tops of secluded large snags or live trees near shallow-water; forages in shallow water	Low—no suitable nesting habitat occurs in the study area. May forage on the margin of ponds. Species has been document within 10 miles of the study area (CNDDDB 2011).
Burrowing owl <i>Athene cunicularia</i>	-/SSC	Found throughout California; known to occur as high as 5,300 feet above mean sea level	Found in open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats; needs open rodent burrows for roosting and cover	Low—no burrows observed in the study area, and the open patches of grassland are small and have dense vegetation, which is not typically used by the species. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).
White-tailed kite <i>Elanus leucurus</i>	-/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County	Forages in lowland open grasslands, meadows, farmlands, and emergent wetlands; nests in dense oak, willow, or other tree stand near open foraging areas	Low—study area does not represent typical nesting and foraging habitat. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).

Table 7. Continued

Common and Scientific Names	Status ^a Federal/State	Distribution	Preferred Habitats	Potential for Occurrence in the Study area
Prairie falcon <i>Falco mexicanus</i>	-/-	Uncommon permanent resident that ranges from southeastern deserts northwest throughout the Central Valley and along the inner Coast Ranges and Sierra Nevada; distributed from annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas	Nests on cliffs or escarpments, usually overlooking dry, open terrain or uplands; uses open terrain for foraging	Low—no potential nesting habitat occurs in the study area. Species may nest to the east on the cliffs around Mount Saint Helena. Study area provides low quality foraging habitat because of the relatively small patches of open area, which are not typical foraging habitat. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).
American peregrine falcon <i>Falco peregrinus anatum</i>	D/D, FP	Permanent resident along the north and south Coast Ranges; may summer in the Cascade and Klamath Ranges and throughout the Sierra Nevada to Madera County; winters in the Central Valley south through the Transverse and Peninsular Ranges and the plains east of the Cascade Range	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large prey populations; takes most prey in flight	Low—study area does not provide potential breeding or roosting habitat. Species may forage over the study area. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).
Bald eagle <i>Haliaeetus leucocephalus</i>	D/E, FP	Nests in Madera, Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin; reintroduced into central coast; winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County	Nests in large, old growth, or dominant live tree with open branchwork, typically within 1 mile of a large permanent water body; forages on large bodies of water, or free-flowing rivers with abundant fish and adjacent snags or other perches	Low—no suitable foraging habitat in the study area. The reservoirs do not represent typical foraging habitat because they are relatively small. Trees in the study area do not represent suitable nesting habitat. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).

Table 7. Continued

Common and Scientific Names	Status ^a Federal/State	Distribution	Preferred Habitats	Potential for Occurrence in the Study area
Northern spotted owl <i>Strix occidentalis caurina</i>	T/SSC	In California, occurs from northwestern California south to Marin County, with the southeastern boundary the Pit River area of Shasta County	Generally inhabits older forested habitats with multi-layered, multi-species canopy with moderate to high canopy closure, usually in stands with trees having large cavities; typically found in large tracts of contiguous forested habitat	Low—the woodland areas of the study area are relatively small and lack large areas with multi-layered canopies, and in general do not possess large trees that can support potential nesting habitat. Species has been documented nesting 2.25 miles north of the project site (CNDDDB 2011).
Loggerhead shrike <i>Lanius ludovicianus</i>	-/SSC	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north of Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	Low—open habitats in the study area are relatively small. Species has not been documented within approximately 10 miles of the study area (CNDDDB 2011).
Osprey <i>Pandion haliaetus</i>	-/-	Breeds in northern California from Cascade Ranges south to Lake Tahoe, and along the coast south to Marin County	Associated strictly with large, fish-bearing waters, primarily in ponderosa pine through mixed conifer habitats; preys mostly on fish; also takes a few mammals, birds, reptiles, amphibians, and invertebrates; requires open, clear waters for foraging; uses rivers, lakes, reservoirs, bays, estuaries, and surf zones; nests usually within 1 mile of suitable foraging habitat using large trees, snags, and dead-topped trees in open forest habitats for cover and nesting	Low— No suitable foraging and nesting habitat occurs in the study area. Nearby large reservoirs may be used for foraging. Species has been documented within 10 miles of the study area (CNDDDB 2011).
Purple martin <i>Progne subis</i>	-/SSC	Coastal mountains south to San Luis Obispo County, west slope of the Sierra Nevada, and northern Sierra and Cascade ranges; mostly absent from the Central Valley except in Sacramento and Placer Counties largely because of competition from starlings; isolated, local populations in southern California	Mostly nests in abandoned woodpecker holes in tall, old, isolated tree or snag in open forest or woodland; also nests in vertical drainage holes under elevated freeways and highway bridges	Moderate—study area provides potential nesting habitat and foraging opportunities over reservoir and other open areas. Density of potential nest cavities is unknown. Species has been documented within 10 miles of study area (CNDDDB 2011).

Table 7. Continued

Common and Scientific Names	Status ^a Federal/State	Distribution	Preferred Habitats	Potential for Occurrence in the Study area
Tricolored blackbird <i>Agelaius tricolor</i>	–/SSC	Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony	Low—no suitable breeding habitat occurs in the study area. Areas with cattails and tules limited to very small detention ponds. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).
Mammals				
Pallid bat <i>Antrozous pallidus</i>	–/SSC	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations	A wide variety of habitats is occupied, including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests; most common in open, dry habitats with rocky areas for roosting; day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings; roost must protect bats from high temperatures; move deeper into cover if temperatures rise; night roosts may be in more open sites, such as porches and open buildings; few hibernation sites are known, but probably uses rock crevices	Low—no caves, rocky areas, or mines are known to occur in the study area. Any hollow trees and buildings in the study area may represent potential roost habitat, but these areas would not likely provide much protection from summer heat. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).
Townsend’s big-eared bat <i>Corynorhinus townsendii</i>	–/SSC	Throughout California from low desert to mid-elevation montane habitats	Desert, oak woodland, coastal redwood, and mixed coniferous-deciduous forest; day roosts in cave-like spaces including mines, caves, tunnels, and dark spaces in buildings, such as attics; may night roost in more open areas such as under bridges	Low—no caves, rocky areas, or mines are known to occur in the study area. Buildings in the study area may represent potential roost habitat, but these areas would not likely provide much protection from summer heat. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).

Table 7. Continued

Common and Scientific Names	Status ^a Federal/State	Distribution	Preferred Habitats	Potential for Occurrence in the Study area
Long-eared myotis <i>Myotis evotis</i>	-/-	Widespread in California, but generally believed to be uncommon in most of its range; it avoids the arid Central Valley and hot deserts, occurring along the entire coast and in the Sierra Nevada, Cascades, and Great Basin from the Oregon border south through the Tehachapi Mountains to the Coast Ranges	Has been found in nearly all brush, woodland, and forest habitats, from sea level to at least 2700 m (9000 ft), but coniferous woodlands and forests seem to be preferred; roosts in buildings, crevices, spaces under bark, and snags and uses caves primarily as night roosts; roosts singly or in fairly small groups; feeds along habitat edges, in open habitats, and over water	Low—preferred habitat is coniferous forests; however, the oak woodland forest could provide potential roosting habitat, and foraging habitat occurs throughout the study area; no hollow trees or snags were observed during surveys. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).
Fringed myotis <i>Myotis thysanodes</i>	-/-	Widespread in California, occurring in all but the Central Valley and Colorado and Mojave Deserts	Occurs in a wide variety of habitats from sea level up to 9,350 feet in elevation; optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer, generally 4,000 to 7,000 feet in elevation; roosts in caves, mines, buildings, and crevices	Low—outside of the optimal elevation range and potential roost sites are limited to buildings. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).
Silver-haired bat <i>Lasionycteris noctivagans</i>	-/-	Distribution includes coastal and montane forests from the Oregon border south along the coast to San Francisco Bay, and along the Sierra Nevada and Great Basin region to Inyo Co; also occurs in southern California from Ventura and San Bernardino Counties south to Mexico and on some of the Channel Islands	Summer habitats include coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats; summer range is generally below 9,000 feet; roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark	Low—no preferred habitat occurs in the study area; however, the oak woodland forest could provide potential roosting habitat, and foraging habitat occurs throughout the study area; no hollow trees or snags were observed during surveys. Species has been documented within approximately 10 miles of the study area (CNDDDB 2011).

Table 7. Continued

Common and Scientific Names	Status ^a Federal/State	Distribution	Preferred Habitats	Potential for Occurrence in the Study area
Western red bat <i>Lasiurus blossevillii</i>	-/SSC	Common in some areas of California, occurring from Shasta Co. to the Mexican border, west of the Sierra Nevada/Cascade crest and deserts; winter range includes western lowlands and coastal regions south of San Francisco Bay; migrates between summer and winter ranges, and migrants may be found outside the normal range	Day roosts are commonly in edge habitats adjacent to stream or open fields, in orchards, and sometimes in urban areas. Preferred roost sites are protected from above, open below, and located above dark ground cover. They are strongly associated with intact riparian habitat, particularly mature stands of willows, cottonwoods, and sycamores (Pierson, E. D. et. al. 2006). The Central Valley is the primary breeding area for western red bats in the California. There use of the coastal areas north of San Francisco appears to be used less frequently. They typically feed over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands	Moderate—potential roosting habitat occurs along riparian habitats and foraging habitat occurs throughout the study area. Has been documented within 10 miles of the study area (CNDDDB 2011).
American badger <i>Taxidea taxus</i>	-/SSC	Throughout California, except for the humid coastal forests of northwestern California in Del Norte and northwestern Humboldt Counties	Suitable habitat characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils; primarily eat fossorial rodents: rats, mice, chipmunks, and especially ground squirrels and pocket gophers; also eat some reptiles, insects, earthworms, eggs, birds, and carrion; diet shifts seasonally and yearly in response to availability of prey	Low—conditions in the study area are atypical. No evidence of ground squirrels or other fossorial rodents in the study area. Has been documented within 10 miles of the study area (CNDDDB 2011).

Table 7. Continued

Common and Scientific Names	Status ^a Federal/State	Distribution	Preferred Habitats	Potential for Occurrence in the Study area
^a Status:				
Federal				
E	=	listed as endangered under the federal Endangered Species Act.		
T	=	listed as threatened under the federal Endangered Species Act.		
D	=	delisted.		
State				
E	=	listed as endangered under the California Endangered Species Act.		
D	=	delisted.		
FP	=	fully protected under the California Fish and Game Code.		
SSC	=	species of special concern in California.		
^b Known occurrences from DFG's California Natural Diversity Database. 2011. RareFind, Version 3.1.0 (August 2011 update).				

peregrine falcon were identified as having low potential to occur in the study area because, although they may forage over the study area, it does not provide suitable roosting or nesting habitat for these species. Further discussion of special-status wildlife species with moderate to high potential for occurrence follows.

Foothill Yellow-Legged Frog

Foothill yellow-legged frog has been documented approximately 4 miles to the west of the study area (California Natural Diversity Database 2011). Foothill yellow-legged frogs may use the perennial creeks and intermittent tributaries that retain pools that occur in the study area into late summer. The most suitable breeding habitat in the study area includes Kellogg Creek, Redwood Creek, and Tributary 4. Tributaries 1 and 2 provide only limited foraging opportunities because they are generally steep, incised channels with limited open areas for adult basking, little open shallow water habitat for egg-laying and tadpole-rearing, and limited pool habitat for escape cover. Tributary 3 consists mostly of boulder/cascade steps and scour pools and thus represents poor breeding habitat for yellow-legged frogs but could be used by non-breeding adults for foraging, basking, and dispersal. Tributary 5 currently provides poor quality habitat for foothill yellow-legged frogs because of low, shallow flowing conditions and a lack of any deeper habitat that could support breeding and escape habitat.

California Red-Legged Frog

California red-legged frog has been documented approximately 12.5 miles southeast of the study area (California Natural Diversity Database 2011). California red-legged frog may occur in the lower reservoir, detention ponds, and low-gradient streams that occur in the study area. This species typically breeds in ponds with emergent vegetation or slow-moving side channels or low-gradient streams but also can be found in aquatic sites with no emergent vegetation.

The lower reservoir and two of the three smaller detention ponds in the vineyards represent potential aquatic habitat for California red-legged frog; however, the lower reservoir represents lower-quality habitat because it generally lacks emergent vegetation and supports a large population of bullfrogs and fish. The two small detention ponds have emergent cattails and appear to pond seasonally, thus potentially could be used by red-legged frogs for breeding even though they are surrounded by vineyard.

The upper reservoir likely would not support viable populations of red-legged frogs or other amphibians because its management for irrigation results in frequent drawdowns and treatment with the aquatic herbicides described earlier.

The lower reaches of Kellogg Creek and Redwood Creek in the study area potentially could be used by red-legged frogs for breeding, dispersal, and foraging.

Tributaries 1, 2, 3, and 5 represent poor breeding habitat for California red-legged frog because they have steep gradients and lack pools with slower-moving water. The lower

portion of Tributary 4 (area approximately 500 feet upstream of its confluence with Kellogg Creek) has a lower gradient and pools large enough to support breeding habitat. All of these tributaries could be used as dispersal habitat and possibly foraging for adults.

The undeveloped upland portions of the study area represent potential dispersal and aestivation habitat for California red-legged frogs.

Western Pond Turtle

Four western pond turtles were observed basking on the banks of the lower reservoir during the September 12, 2011, site visit. The nearest CNDDDB record is approximately 2 miles southwest of the study area (California Natural Diversity Database 2011).

The upland areas that surround the pond likely are used by western pond turtles for egg laying. As noted above for California red-legged frog, the upper reservoir represents poor quality habitat for western pond turtle because the banks are relatively steep and covered with a thick layer of plastic, which would make entering and exiting the pond for basking difficult, and the treatment of the pond with aquatic herbicides would limit available aquatic vegetation for foraging and likely limit available animal prey. The detention ponds in the vineyards represent poor habitat for western pond turtles because two of them are too heavily vegetated with cattails to provide suitable basking habitat and the third pond appears to hold water for only brief periods of time. The slower-moving portions of Kellogg Creek and Redwood Creek represent potential habitat for western pond turtle. The tributaries in the study area generally do not represent potential habitat because they lack suitable escape habitat and have intermittent flows and limited basking opportunities. Western pond turtle may use these areas for dispersal.

Sharp-Shinned Hawk

Sharp-shinned hawk was documented nesting approximately 7.5 miles southwest of the project site in Napa County. There are no other nest occurrences for this species within 10 miles of the study area or in Sonoma, Napa, and Lake Counties (California Natural Diversity Database 2011).

Sharp-shinned hawk may use the study area for wintering habitat, but no suitable nesting habitat (dense stands of coniferous forests at mid-elevations) occurs in the study area. The woodland portions of the study area could provide foraging and roosting habitat for sharp-shinned hawk.

Golden Eagle

The nearest record for golden eagle is approximately 16 miles northeast of the study area (California Natural Diversity Database 2011).

Golden eagle may use the open grassland and chaparral portions of the study area for foraging, but there is no suitable nesting habitat (cliffs and escarpments or tall trees overlooking open country) in the study area. Suitable cliff nesting habitat occurs to the east on Mount Saint Helena, but no such habitat occurs in the study area. No large trees were observed in the study area that could support a large platform nest (golden eagle nests are typically 10 feet wide and 3 feet high).

Purple Martin

The nearest record for purple martin is approximately 4 miles east of the study area (California Natural Diversity Database 2011).

Any snags or trees with cavities that could be used for nesting in the mixed oak forests represent potential nesting habitat for purple martin in the study area. No snags or trees with cavities were observed during reconnaissance-level surveys; however, no specific surveys for these features were conducted. Open portions of the project area represent potential foraging habitat for the species.

Western Red Bat

The nearest record for western red bat is approximately 13 miles north of the study area (California Natural Diversity Database 2011).

The riparian areas within the study area represent potential roosting habitat for western red bat. Their roosts are primarily in mature stands of riparian woodlands (stands of cottonwoods and sycamores), but may also occur in edge habitats adjacent to streams, fields, or urban areas. Western red bats forage over a wide variety of habitats, including grasslands, shrublands, open woodlands and forests, and croplands; therefore, most of the study area represents potential foraging habitat.

Special-Status Fish Species

Table 7 lists seven fish species that were evaluated for their potential to occur in the study area. The species listed in this table are based on a review of the USFWS list and a query of the CNDDDB for the Mount Saint Helena quadrangle and surrounding eight quadrangles. This table provides summaries of these species' status, distribution, preferred habitat, and potential for occurrence in the study area.

Two special-status fish species, the Central California Coastal steelhead distinct population segment (DPS) and the Central California Coast coho salmon evolutionarily significant unit (ESU), are known to occur in, or immediately downstream of, the project area. The California coastal Chinook salmon ESU, a federally listed threatened species that occurs in the Russian River, and the Central Valley steelhead DPS, a federally listed threatened species that occurs in Central Valley rivers and streams, are not addressed in this assessment because their range is outside the study area. The

distribution, status, and biology of each special-status fish species potentially affected by the proposed project are described briefly below.

Central California Coast Steelhead Distinct Population Segment Status

Central California Coast steelhead DPS was listed as threatened under the federal ESA on August 18, 1997 (62 FR 43937); threatened status was reaffirmed on January 5, 2006 (71 FR 834). This DPS consists of steelhead below natural and constructed (i.e., dams) impassable barriers in California coastal streams from the Russian River (Sonoma and Mendocino Counties) south to and including Aptos Creek (Santa Cruz County), and the drainages flowing into San Francisco, San Pablo, and Suisun Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers. It also includes streams tributary to Suisun Marsh (71 FR 849, January 5, 2006). The Don Clausen Fish Hatchery and Kingfisher Flat Hatchery/Scott Creek (Monterey Bay Salmon and Trout Project) steelhead hatchery populations are part of the listed steelhead population (74 FR 834, January 5, 2006). The final rule designating Central California Coast steelhead critical habitat was issued September 2, 2005 (70 FR 52488). Kellogg Creek is included in this designation and, therefore, has been identified by NMFS as an area essential to the recovery of steelhead, thereby requiring special management actions.

The naturally spawning population of steelhead in the Russian River is believed to have declined sevenfold since the mid 1960s (71 FR 852). While recent data indicate that juvenile density has declined for five representative populations in the DPS, juvenile steelhead have been observed in approximately 82% of historically occupied streams, indicating that the species is relatively well distributed spatially. However, impassable dams have fragmented substantial portions of the historical habitat, generating concern about the spatial structure of the naturally spawning populations. This concern has led NMFS to conclude that the entire DPS is “likely to become endangered in the foreseeable future” (71 FR 852).

Life History and Distribution in Project Area

Only winter steelhead occur in the Central California Coast steelhead DPS (61 FR 41541–41561, August 9, 1996). Generally, adult steelhead of this DPS may start to enter rivers from October (in larger basins) through late November (in smaller basins) and may be present in the river through June. Adult spawning begins in November (in larger basins) and December (in smaller basins) and can continue through April, with a peak in February and March (61 FR 41541– 41561, August 9, 1996). Because little additional life history information exists for this steelhead DPS, the following life history information is summarized from Shapovalov and Taft (1954), who conducted one of the most comprehensive investigations of steelhead life history as part of studies of Waddell Creek in Santa Cruz County.

Adult steelhead leave the ocean to migrate up coastal streams and inland rivers with high flows from early November through early May, although most probably enter fresh

water from late December through late April. The timing and rate of migration depend on several factors, including stream discharge and water temperatures. Spawning can occur either shortly thereafter or some time later, depending on the sexual maturity of the fish, but probably peaks from January through March. Adult steelhead spawn in shallow redds (nests) constructed in relatively clean, loose gravels, typically at the ends of pools and at the heads of riffles that have appropriate water depths and velocities. Unlike all Pacific salmon, which die after spawning, adult steelhead are capable of returning to the ocean after spawning, typically by June of the same year. (Shapovalov and Taft 1954.)

Steelhead eggs incubate in the gravel and hatch after about 19 days in 15.5°C (60°F) water and in about 80 days at 4°C (40°F). The average incubation period is approximately 4 to 6 weeks. After hatching, the young fish (alevins) remain in the gravel for an additional 2 to 6 weeks before emerging and taking up residence in the shallow margins of the stream. The juvenile fish feed primarily on aquatic and terrestrial insects for periods ranging from less than 1 year to 4 years. Most juvenile steelhead spend 1 to 3 years in fresh water before emigrating to the ocean as smolts. (Shapovalov and Taft 1954.)

Steelhead smolts, those juveniles developed sufficiently to live in saltwater, typically migrate to the ocean as flow declines and water temperature increases in April, May, and June. Before their downstream migration, juveniles undergo physiological changes (smoltification) to prepare them for life in the saltwater of the ocean. Steelhead live in the ocean for 1 to 3 years before maturing and returning to fresh water to spawn. Because juvenile steelhead rear year-round in fresh water, adequate flows and water temperatures and an abundant food source are necessary throughout the year to sustain steelhead populations. Conditions adequate to sustain steelhead populations are especially important during summer, when declining flows could reduce habitat availability, water temperatures might exceed the species' tolerance levels, and rearing juveniles experience increased competition for living space and food.

A survey conducted by DFG in 1973 indicates that steelhead were found historically throughout Kellogg Creek. During 1993–2002, Merritt Smith Consulting (2003) conducted annual surveys for juvenile salmonids in Redwood Creek between Highway 128 and the Kellogg Creek–Yellowjacket Creek confluence. Between 1993 and 2002, summer seining surveys showed variable steelhead numbers (1.8 to 125.3 steelhead per habitat unit sampled), with lower numbers collected following the driest winters (1994 and 2001). There is no record of any other focused fish surveys in the study area since 2002. During a visual survey of Tributary 4, an intermittent stream tributary to Kellogg Creek in the study area, on March 13, 2008, an ICF fish biologist observed three juvenile steelhead at three separate locations—two of the juvenile steelhead were observed between the waterfall complex near Pooh Sticks Bridge and the road while the third juvenile steelhead was observed in an upstream drainage above its confluence with Tributary 4. All of the juvenile steelhead were yearling size (4 to 6 inches long). No adult steelhead or evidence of spawning (redds) was observed in Tributary 4 or in the upstream drainage, and spawning habitat in Tributary 4 and the upper drainage was found to be lacking. These fish presumably left Kellogg Creek and entered Tributary 4

and moved upstream in response to seasonal flows following winter storms; the intermittent nature of Tributary 4 precludes year-round rearing in this stream. One adult steelhead (approximately 24 inches long) was observed in a pool in Kellogg Creek on the same day.

Critical Habitat in Project Area

Kellogg Creek is included in the critical habitat range for this species. Critical habitat consists of the water, substrate, and adjacent riparian zone of accessible reaches of Kellogg Creek.

Central California Coast Coho Evolutionarily Significant Unit Status

Central California Coast coho ESU was listed as threatened under the federal ESA on October 31, 1996 (61 FR 56138), and later downgraded to endangered on June 28, 2005 (70 FR 37160); endangered status was reaffirmed on August 15, 2011 (76 FR 50447). The species was listed as endangered under the CESA in August 2002. This ESU consists of all naturally spawned coho salmon populations in coastal streams from Punta Gorda in northern California south to and including the San Lorenzo River in Santa Cruz County, as well as populations in tributaries to San Francisco Bay, excluding the Sacramento–San Joaquin River system. The Don Clausen Fish Hatchery Captive Broodstock Program, Scott Creek/King Fisher Flats Conservation Program, Scott Creek Captive Broodstock Program, and the Noyo River Fish Station Egg-Take Program coho salmon hatchery populations are part of the listed coho salmon population (70 FR 37160, June 28, 2005). The final rule designating Central California Coast coho salmon critical habitat was issued May 5, 1999 (64 FR 24049). Kellogg Creek is included in this designation and, therefore, has been identified by NMFS as an area essential to the recovery of coho salmon, thereby requiring special management actions.

A status report prepared by NMFS in 2005 determined that the current information on coho salmon run size in this ESU, including in the Russian River drainage, is limited. The data that do exist suggest that the Russian River population is at high risk of extinction (Good et al. 2005). More than 190 adult coho salmon are estimated to have returned to the Russian River in fall 2010, which is considerably more than have returned in recent years although still well below the recovery goal of 6,000 adult spawners annually for the Russian River (Sea Grant California 2011).

Life History and Distribution in the Study Area

Relative to other anadromous salmonids, coho salmon have a relatively simple 3-year life cycle, spending approximately 1 year in fresh water and 2 years in the ocean before returning to spawn. Following their ocean phase, adult coho salmon enter coastal estuaries and streams and begin their inland migration to freshwater spawning areas. The timing of immigration varies regionally and seasonally in response to increased streamflows in fall and early winter that allow adults to enter coastal streams. In the

Russian River, coho salmon generally enter the river from October through mid-January, based on fyke net studies (Merritt Smith Consulting 2003) and spawn from December through mid-February (Entrix 2002). Spawning is similar to that described above for steelhead. The juvenile rearing period extends from the time of fry emergence to smolt emigration. In general, juveniles prefer cool, clear, well-oxygenated streams with deep pools (more than 3 feet deep), and dense riparian (overhead) and submerged cover (e.g., woody material). During winter, juveniles commonly seek shelter in large mainstream pools, small tributaries, and backwater areas with dense cover. Juvenile coho salmon emigrate from California streams from March through May, with peak emigration occurring in late April and mid-May. Outmigrants are mostly 12 to 15 months old (age 1+), although older fish (age 2+) may be present.

Limited data exist on the occurrence and distribution of coho salmon in the study area. During 1993–2002, Merritt Smith Consulting (2003) conducted annual surveys for juvenile salmonids in Redwood Creek between Highway 128 and the Kellogg Creek–Yellowjacket Creek confluence. In fall 1994, 55 juvenile coho salmon, or an average of 11 juvenile coho salmon per habitat unit sampled, were captured by repeated seining of habitat units in this reach of Redwood Creek. Three juvenile coho salmon, or an average of 0.6 juvenile coho salmon per habitat unit sampled, from the same year-class were captured in the following summer (1994) (Merritt Smith Consulting 2003), indicating movement out of this portion of the creek or low survival. Seining surveys in subsequent years (fall 1994 through fall 2002) did not capture any juvenile coho salmon in this reach of Redwood Creek. In 2001, DFG collected two coho salmon young-of-year in Redwood Creek downstream of the study area near the confluence with La Franchi Creek (California Department of Fish and Game 2006). Historical and current data or anecdotal observations regarding the occurrence of adult coho salmon in the study area are lacking. There are no data or anecdotal observations of the occurrence of the species in the study area since 1994, and in Redwood Creek since 2001. There is no record of any other focused fish surveys in the study area since 2002.

Critical Habitat in Project Area

Essential features of critical habitat for the Central California Coast coho salmon ESU are (64 FR 24049): “(1) substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food, (8) riparian vegetation, (9) space, and (10) safe passage conditions.”

Other Fish Species

Additional fish species present in the study area include native and introduced species. Fish species collected during sampling by Merritt Smith Consulting (2003) during the period 1993–2002 as part of juvenile steelhead and coho salmon surveys in Redwood Creek between Highway 128 and Yellowjacket Creek include native sculpin (*Cottus* spp.) and roach (*Lavinia symmetricus*), and introduced bluegill (*Lepomis macrochirus*) and smallmouth bass (*Micropterus dolomieu*).

Essential Fish Habitat in Project Area

Essential Fish Habitat (EFH) is the aquatic habitat (water and substrate) necessary for fish to spawn, breed, feed, or grow to maturity that would allow a level of production needed to support a long-term, sustainable commercial fishery and contribute to a healthy ecosystem (National Marine Fisheries Service 1998). Consultation with NMFS is required for potential effects on coho salmon because of their commercial value; no consultation is required for steelhead because steelhead are not a commercial species.

Fish in the project area that are covered under the EFH assessment are Central California Coast coho salmon. Important components of EFH for spawning, rearing, and migration are adequate:

- Substrate composition
- Water quality
- Water quantity, depth, and velocity
- Channel gradient and stability
- Food
- Cover and habitat complexity
- Space
- Access and passage
- Habitat connectivity

EFH is included in Kellogg Creek for Central California Coast coho salmon.

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?***

Impacts on Special-Status Plants

The land cover types in the study area that represent potential habitat for special-status plants are chaparral, mixed oak forest, annual grassland, wet meadows, unnamed tributaries, and Kellogg Creek.

Vineyard Conversion/Upper Reservoir Construction

At the time of baseline conditions in the study area, the areas that were converted to 39 acres of vineyard and the approximately 3-acre upper reservoir supported approximately 9 acres of mixed oak forest and 33 acres of chaparral. These natural

communities represent potential habitat for 58 special-status plant species identified as having potential to occur in the study area (Table 6).

Of these 58 species, 48 have specific microhabitat requirements (e.g., soil types, mesic conditions) within mixed oak forest and chaparral that may or may not have been met in the areas converted to vineyard and the upper reservoir. For example, 30 of the 58 special-status plant species that have potential habitat in mixed oak forest or chaparral are associated with (i.e., restricted to, or commonly found on) serpentine, rhyolitic, or adobe clay soils. Although the dominant soil type in the study area is a gravelly loam, there is a low potential for small areas of other soil types (e.g., serpentine outcrops) that may have supported these 30 special-status species to have been present in the areas converted to vineyard and the upper reservoir.

The proposed project may have had an impact on special-status plants. No floristic surveys of the study area were completed prior to the vineyard conversion and upper reservoir construction, so the presence or absence of special-status plants in the affected areas is unknown. However, the area affected by the conversion to vineyard and the construction of the upper reservoir is very small compared to the total acreage of the natural communities in the study area. Also, no special-status plants were observed during the reconnaissance-level surveys described earlier. Accordingly, this impact is considered less than significant.

Impacts on Special-Status Wildlife

The proposed project has the potential to affect foothill yellow-legged frog, California red-legged frog, western pond turtle, purple martin, western red bat, and nesting birds protected under the MBTA. Discussions of these impacts for each species are provided below. Although sharp-shinned hawk and golden eagle may forage and roost in the study area, they are not expected to nest on site. Past conversions of chaparral and mixed oak forest have not had substantial adverse effects on these species.

The following permit terms, substantially as follows, will also be included in any permit or license issued pursuant to Application 30745.

- The Permittee shall obtain approval of the U.S. Fish and Wildlife and the California Department of Fish and Game prior to any reservoir dredging operations. Permittee shall submit to the Deputy Director for Water Rights evidence of agencies' approval prior to any future reservoir dredging operations.
- No non-native fish species will be introduced into the reservoir.
- This permit does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 USC sections 1531 to 1544). If a take will result from any act authorized under this

water right, the Applicant shall obtain authorization for an incidental take prior to construction or operation of the project. Applicant shall be responsible for meeting all requirements of the applicable Endangered Species Act for the project authorized under this permit.

Potential Impact on Foothill Yellow-Legged Frog

The proposed bypass likely will improve the quality of habitat for foothill yellow-legged frog in Tributary 5 and in Kellogg Creek downstream of its confluence with Tributary 5 by increasing flow volumes, which over time will remove accumulated sediment and likely expose larger gravels and create pool and riffle habitat.

In addition, standard permit terms as described above in the Hydrology and Water Quality section will be included in any water right permit or license issued pursuant to Application 30745, which will serve to protect aquatic habitat for foothill yellow-legged frog.

The past conversion of 39 acres of chaparral and mixed oak forest to vineyard and the construction of the upper reservoir would not likely have resulted in impacts on foothill yellow-legged frogs because no streams were identified in these areas or within 50 feet. This determination is based on the review of the USGS Mount Saint Helena 7.5-minute topographic quadrangle and historical aerial photographs available on Google Earth that predate the conversion of these areas.

Potential Impact on California Red-Legged Frog

Increased flows in Kellogg Creek downstream of its confluence with Tributary 5 following the construction of the bypass facility will improve instream conditions in this reach of Kellogg Creek. Therefore, the proposed project will not negatively affect California red-legged frog habitat in Kellogg Creek. No other potential aquatic habitat in the study area will be affected by the proposed project.

In addition, the permit terms described above in the Hydrology and Water Quality section will be included in any water right permit or license issued pursuant to Application 30745, which will serve to protect aquatic habitat for California red-legged frog.

The past conversion of 39 acres of chaparral and mixed oak forest to vineyard and the construction of the upper reservoir would not likely have resulted in impacts on California red-legged frog aquatic habitat because no streams or ponds were identified in these areas or within 50 feet. This determination is based on the review of the USGS Mount Saint Helena 7.5-minute topographic quadrangle and historical aerial photographs available on Google Earth that predate the conversion of these areas.

The past conversions did affect potential California red-legged frog upland habitat. These areas are defined as within 1 mile of suitable aquatic habitat for California red-legged frog and thus represent potential dispersal and upland refugia habitat. The

clearing of these areas occurred outside of the rainy season and thus would not likely have resulted in effects on dispersing California red-legged frogs at that time. California red-legged frogs typically disperse long distances only during fog or rainfall events. Also, the converted areas are adjacent to existing large vineyards that already create a potential barrier to red-legged frog dispersal, or at least already make dispersing frogs more vulnerable because of the lack of ground cover. The addition of these new vineyards thus did not likely substantially increase the existing barrier (see Figure 6) Therefore, the impact on dispersal habitat, considering baseline conditions, is considered less than significant.

Also, it is unlikely that California red-legged frogs would have been using the converted areas as upland refugia because the suitable breeding habitat identified in the study area is generally perennial (Kellogg Creek, Redwood Creek, and two northernmost detention ponds), and thus California red-legged frogs would not likely seek upland refugia as long as this aquatic habitat remained suitable. California red-legged frogs using non-breeding aquatic habitats (e.g., Tributary 3) during the summer likely would move to the nearest suitable aquatic habitat, which would be Kellogg Creek, or the nearest suitable upland habitat, which typically would be the adjacent riparian vegetation. Because the converted areas did not contain aquatic habitats and were not within 50 feet of any mapped streams, it is assumed that any California red-legged frogs in the study area at the time of the conversions would not likely have been using these areas as upland refugia because more suitable upland habitat occurs closer to potential aquatic habitats. Therefore, the impact on potential California red-legged frog upland refugia is considered to be less than significant.

Potential Impact on Western Pond Turtle

The permit terms discussed above in the Hydrology and Water Quality section will be included in any water right permit or license issued pursuant to Application 30745, which will serve to protect aquatic habitat for western pond turtle.

The past conversion of 39 acres of chaparral and mixed oak forest to vineyard and the construction of the upper reservoir would not likely have resulted in impacts on western pond turtle because no aquatic habitats were identified in these areas. This determination is based on the review of the USGS Mount Saint Helena 7.5-minute topographic quadrangle and historical aerial photographs available on Google Earth that predate the conversion of these areas. Any impacts on western pond turtle from the conversion of the 39 acres to vineyards and the construction of the upper reservoir are considered to be less than significant.

Potential Impact on Western Red Bat

Western red bats roosting in the riparian vegetation could be affected by construction activities occurring there. The removal of trees and shrubs in the study area could directly affect western red bats if they are found to be roosting there.

In addition, the permit terms discussed in the Hydrology and Water Quality section will be included in any water right permit or license issued pursuant to Application 30745, which will serve to protect riparian habitat for western red bat.

Furthermore, potential roosting habitat will be enhanced over the long term through the expansion and improvement of potential roosting habitat in the study area. This will be achieved through the enhancement of riparian habitat along Tributary 5 and Kellogg Creek. Riparian vegetation on Tributary 5 will be improved through the reintroduction of flows to this channel. This addition of water will improve the quality of the existing habitat by creating conditions more suitable for the recruitment of riparian trees and shrubs (see the permit term discussed below in impact discussion **b.**) In addition, open areas along Tributary 5 will be planted with riparian trees and shrubs, if necessary²⁰. Also an invasive species removal plan (see Figure 7) will be developed for Kellogg Creek that will further enhance the quality of riparian habitat, thereby creating space for the recruitment and establishment of native riparian vegetation (see the permit term discussed below in impact discussion **b.**). These improvements to riparian vegetation will improve the long-term quality of roosting habitat in the study area.

The past conversion of 9 acres of mixed oak forest would not likely have resulted in impacts to roosting individuals or a loss of roosting habitat, because no riparian vegetation (their preferred roosting habitat) was impacted by these actions.

Potential Impact on Nesting Migratory Birds and Raptors, including Purple Martin

The permit terms discussed in the Hydrology and Water Quality section will be included in any water right permit or license issued pursuant to Application 30745, which will serve to protect riparian habitat for nesting birds and raptors.

Additionally, potential nesting habitat will be enhanced through the expansion and improvement of nesting habitat in the study area. This will be achieved through the enhancement of riparian habitat along Tributary 5 and Kellogg Creek. Riparian vegetation on Tributary 5 will be improved through the reintroduction of flows to this channel. This addition of water will improve the quality of the existing habitat by creating conditions more suitable for the recruitment of riparian trees and shrubs. In addition, open areas along Tributary 5 will be planted with riparian vegetation, if necessary. Also an invasive species removal plan (developed in conjunction with the Division and DFG) will be developed for Kellogg Creek that will further enhance the quality of riparian habitat, thereby creating space for the recruitment and establishment of native riparian vegetation (see the permit term discussed below in impact discussion **b.**). These improvements to riparian vegetation will improve the long-term quality of nesting habitat in the study area.

²⁰ Construction of the proposed bypass facility at the lower reservoir would only involve the removal of a few shrubs, and up to two mature trees (one oak and one fir tree). If these resources can be avoided, riparian tree and shrub planting in Tributary 5 will not be required.



Figure 7
Stream Class Designations and Survey Areas,
and Proposed Invasive Species Removal Areas



The past conversion of 39 acres of chaparral and mixed oak forest to vineyard and the construction of the upper reservoir may have affected nesting migratory birds and raptors because some of the vegetation clearing occurred during the nesting season and may have impacted active nests; however the magnitude of these impacts is unknown (i.e., the number of impacted nests is unknown). Considering the amount of available natural habitat in the vicinity of the study area and that these areas were on the edge of existing vineyards it is assumed that any impacts to nesting birds would not have substantially adversely affected local populations; therefore this impact is considered less than significant.

Potential Impact on Special-Status Fish and Other Aquatic Organisms

The January 9, 2009 report entitled *Peter Michael Winery, Home Ranch Property (Application 30745)—Evaluation of Kellogg Creek between Tributaries 4 and 5 to Determine Preferred Location for Tributary 5 Reservoir Bypass Releases* (ICF Jones & Stokes 2009) suggests Tributary 4 has marginal habitat for fish in its lower reach, and the FMF would be best placed in Kellogg Creek, a known steelhead and designated coho stream. Even though water would still be regularly spilled from the reservoir into Tributary 4 (although at a slightly lesser rate once the FMF bypass is implemented), DFG's main concern was that altering existing flows in Tributary 4 could degrade current habitat for amphibians, benthic macroinvertebrates, and fish in Tributary 4. DFG further expressed that if the FMF was bypassed to Tributary 5, any loss of habitat in Tributary 4 would need to be mitigated by the Applicant. The invasive species removal plan described below under impact b. is a direct consequence of these conversations with DFG.

In addition to the development of the invasive species removal plan, DFG has also requested that a 5-year effectiveness monitoring program be conducted on Tributaries 4 and 5. The purpose of the monitoring would be to evaluate on an annual basis whether FMF releases in Tributary 5 are creating amphibian and benthic macroinvertebrate habitat as expected and whether the partially reduced streamflows in Tributary 4 are reducing habitat quality. In order to achieve this, DFG has requested that the invertebrate community in both tributaries be surveyed at the appropriate time of the year (most likely during late winter when streamflows are at their maximum).

The following permit term will be included in any water right permit or license issued pursuant to Application 30745 to reduce impacts on amphibians, benthic macroinvertebrates, and fish to a less-than-significant level.

- Surveys for amphibians and benthic macroinvertebrates (and fish in Tributary 4) will be conducted in Tributaries 4 and 5 in accordance with a survey plan satisfactory to DFG. Prior to the construction of the bypass facility on Tributary 3, Permittee shall submit a copy of the survey plan, evidence that the plan is satisfactory to DFG, and a copy of the initial baseline conditions report completed in accordance with the survey plan to the Deputy Director for Water Rights.

Subsequent reports shall be submitted to the Deputy Director for Water Rights in accordance with the time schedule contained in the survey plan.

The methodology proposed for the benthic macroinvertebrate surveys is described in detail in the report entitled Peter Michael, Home Ranch Property (Application 30745)—Benthic Macroinvertebrate Mitigation Monitoring Work Plan (ICF International 2012).

The past conversion of 39 acres of chaparral and mixed oak forest to vineyard and the construction of the upper reservoir did not affect special-status fish species or other aquatic organisms because no aquatic habitats were identified in these areas. This determination is based on the review of the USGS Mount Saint Helena 7.5-minute topographic quadrangle and historical aerial photographs available on Google Earth that predate the conversion of these areas. Any impacts on special-status fish species or other aquatic organisms from the conversion of the 39 acres to vineyards and the construction of the upper reservoir are considered to be less than significant.

- 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?***

Riparian Habitat

Vineyard Conversion/Upper Reservoir Construction

The conversion of 39 acres to vineyard and the construction of the upper reservoir were unlikely to have had a substantial adverse effect on riparian habitats based on available information. Historical aerial photographs that predate the vineyard conversion and reservoir construction do not show any streams and associated riparian areas occurring within the development footprint. Additionally, the Applicant implemented 50-foot-wide setbacks from stream corridors as part of compliance with the terms and conditions of the Sonoma County Grading Permit and the Sonoma County Vineyard Erosion and Sediment Control Ordinance (Sonoma County Code, Chapter 30, Article V, Ord. No. 5216 § 2, 2000).

Tributary 5

The proposed bypass flows would result in beneficial impacts on riparian vegetation along Tributary 5 from the reintroduction of flows into the channel and the enhancement of the riparian habitat by planting native riparian species in open areas (described below as permit terms). The addition of water from reintroduction of flows will improve the quality of the existing habitat by creating conditions more suitable for the recruitment of riparian trees and shrubs. Planting native riparian vegetation in open areas, if necessary, would also enhance the riparian habitat by initiating the development of a more contiguous riparian corridor that can be used by wildlife.

Kellogg Creek

The proposed bypass flows and the removal of invasive species and the replanting of native riparian vegetation would result in beneficial impacts on riparian vegetation along Kellogg Creek (described below as permit terms).

The following permit terms will be included in any water right permit or license issued pursuant to Application 30745 to reduce impacts on riparian habitat to a less-than-significant level.

- No work shall commence and no water shall be diverted, stored, or used under this permit until a copy of a Lake and Streambed Alteration Agreement between the California Department of Fish and Game and the Applicant is filed with the Division of Water Rights. Compliance with the terms and conditions of the agreement is the responsibility of the Applicant.
- No water shall be diverted under this permit unless the Permittee is operating in accordance with an invasive plant mitigation plan satisfactory to the Deputy Director for Water Rights and DFG. The mitigation plan shall address eradication of non-native plant species. The Permittee shall submit a report on mitigation plan activities in accordance with the time schedule contained in the mitigation plan, and whenever requested by the Division of Water Rights. The Deputy Director for Water Rights may require modification of the mitigation plan upon a determination that the plan is ineffective or unsuccessful, or provide relief from this term upon a determination that the mitigation plan is no longer required.

These actions will be combined into a single plan that will be submitted for approval to the Division and the California Department of Fish and Game prior to bypass construction activities. The plan will include a monitoring component and success criteria to determine the effectiveness of the invasive species removal and associated hydroseeding effort, and, if necessary, riparian species plantings. Monitoring of plantings will be done annually for five years, or until plantings have been determined to have become successfully established with a minimum of 75% survival of plantings.

Additionally, the following permit term will be included in any water right permit or license issued pursuant to Application 30745, which will serve to protect riparian habitat.

- After the bypass structure construction is complete, the Applicant will establish a setback along Tributary 3 of 50 feet or the distance specified in Sonoma County Code, Chapter 30, Article V. Section 26-66-030, whichever is greater. The stream setback will be measured from the top of the bank on both sides of the stream. Except for activities required for operation, maintenance, and replacement of the bypass facility, no activity will occur in the setback area. These requirements shall remain in effect as long as water is being diverted under any permit or license issued pursuant to Application 30745.

Mixed Oak Forest

Vineyard Conversion/Upper Reservoir Construction

The conversion of 9 acres of mixed oak forest to vineyard and the construction of the upper reservoir represent an impact on a sensitive natural community; however, these project activities did not appear to have a substantial adverse effect on mixed oak forest because the acreage that was removed represented less than 25% of the total amount of tree canopy on the project site, which is the threshold of significance established by the California Oak Foundation's Oak Woodland Habitat Conservation Ordinance (available: <http://www.californiaoaks.org/ordinance.html>). Therefore, this impact is considered less than significant under CEQA.

- c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means?***

The proposed project would not result in substantial adverse effects on federally protected wetlands in the study area. The conversion of 39 acres to vineyard and the construction of the upper reservoir were unlikely to have had a substantial adverse effect on federally protected wetlands based on available information. Historical aerial photographs that predate the vineyard conversion and reservoir construction do not show any wetlands occurring within the development footprint. Accordingly, there is no impact.

- 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 diversion of water from the Kellogg Creek watershed, in concert with other diversions, may lead to indirect and direct impacts on anadromous salmonids downstream.

The DFG-NMFS Draft Guidelines were developed in 2002 and recommended for use by permitting agencies (including the State Water Board), planning agencies, and water resources development interests when evaluating proposals to divert and use water from northern California coastal streams. The DFG-NMFS draft Guidelines apply to projects located in the geographic area of Sonoma, Napa, Mendocino, and Marin Counties, and portions of Humboldt County. The DFG-NMFS Draft Guidelines recommend that terms and conditions be included in new water right permits for small diversions to protect fishery resources in the absence of site-specific biologic and hydrologic assessments. The DFG-NMFS Draft Guidelines, in large part, recommend:

- Assessing the cumulative impacts of multiple diversion projects on downstream fisheries habitat by calculating the CFII to estimate the cumulative effects of existing and pending projects in a watershed of interest.

- Limiting new water right permits to diversions during the winter period (December 15 through March 31) when streamflows are generally high.
- Providing a minimum bypass flow downstream of diversions not less than FMF as calculated at the points of diversion.
- The new storage ponds be constructed offstream and that permitting of new or existing onstream storage ponds be avoided.
- Where appropriate, water diversion be screened in accordance with NMFS and DFG screening criteria.

The results of the WAA/CFII report prepared for the project are summarized above in the Hydrology and Water Quality section of this document. The proposed project includes an existing onstream reservoir and will not result in cumulative flow reduction that exceeds the recommendations contained in the DFG-NMFS guidelines with the exception of POIs 4 through 8; however, as described in the Hydrology and Water Quality section above, the CFIs at these POIs and the resultant watershed impacts were determined to be negligible. All other CFII values where fish are known or surmised to be seasonally present are well below 5%.

According to the DFG-NMFS Draft Guidelines, in order for an onstream dam to be approved under a Class III Watershed Exemption, it must meet three criteria:

1. The POD must be located on a stream reach where fishes or non-fish aquatic species were not historically present upstream (i.e., a Class III stream).
2. The POD must be located where the project could not contribute to a cumulative reduction of more than 10% of the natural instantaneous flow in any reach where fish are at least seasonally present.
3. The POD must be located where the project would not cause the dewatering of any fishless stream reach supporting non-fish aquatic species (i.e., a Class II stream).

The following points outline the rationale for determining that this particular project meets the recommendations in the DFG-NMFS Draft Guidelines, including the criteria for allowing an onstream dam.

- The reservoir is located where the project could not contribute to a cumulative reduction of more than 10% of the natural instantaneous flow in any reach where fish are at least seasonally present (Wagner & Bonsignore 2008b).
- The project will not cause the dewatering of any non-fish bearing stream supporting non-fish aquatic species. After the required bypass flows are routed to Tributary 5, spill flows from the reservoir still will be directed into Tributary 4, a Class II intermittent channel in its upper reaches. Approximately 400 feet downstream of the lower reservoir spillway, there is another smaller tributary that augments Tributary 4 with streamflow. Furthermore, the required bypass flows at the lower reservoir essentially will reactivate the Historic Channel (Tributary 5) and will ensure that the channel will not be dewatered.

- The season of diversion conforms with the DFG-NMFS guidelines. A minimum bypass flow slightly greater than the FMF will be imposed as a term in any permit or license issued for Application 30745.
- Because the CFII at each POI is less than 5% for all POIs (except 4 through 8) there is no significant cumulative impact on the anadromous fishery as a result of the proposed project.
- CFII values between 5% and 10% at POIs 4 through 8 were analyzed using both desktop hydrologic analyses and a robust modeling effort focusing on changes on depth and velocity in the locations of POIs 4 through 8. Both the desktop hydrologic analyses and the modeling results showed that Application 30745 contributes negligible impairment to streamflows at these POIs²¹.
- All site-specific studies described in the Hydrology and Water Quality section above were developed via direct consultation with DFG and NMFS.

POD 1 is located on a reservoir that is fed by three Class II channels (Tributaries 1-3). These channels do not presently support nor historically have supported fish. Non-fish aquatic species, however, are and most likely were historically present in these channels. As such, the onstream dam does not fully meet the first criterion described above requiring that a POD must be located on a stream reach where fishes or non-fish aquatic species were not historically present upstream (i.e., a Class III stream). However, increasing flows in Tributary 5, a Class III drainage, could enhance fish habitat in the stretch of Kellogg Creek from the confluence of Tributary 5 to the confluence of Tributary 4, potentially benefiting adult and juvenile migration, spawning, and egg incubation in this reach of Kellogg Creek, compared to existing conditions²². Additionally, water from the FMF could percolate into the ground and streambank around Tributary 5 and possibly enhance late spring and early summer flows to Kellogg Creek. Finally, the bypass of the FMF to Tributary 5 in essence would enhance 861 feet of available amphibian and benthic macroinvertebrate habitat, thus rendering Tributary 5 a Class II drainage. These are all considered beneficial effects.

The past conversion of 39 acres of chaparral and mixed oak forest to vineyard and the construction of the upper reservoir did not substantially interfere with potential wildlife movement corridors. The vineyard is, and presumably prior to 1998 was, surrounded by deer fencing that restricts movement of most wildlife through this area. The vineyards that were constructed prior to 1998, which account for most of the vineyard acreage, likely created a substantial barrier to wildlife that historically would have used this area when moving cross-slope through these woodlands, although species moving up- or down-slope would be less restricted because of the orientation of the vineyards (see Figure 6). The additional conversion of the 39 acres likely widened this area but did not

²¹ Both DFG (Gray pers. comm.) and NMFS (Hines pers. comm.) have agreed to the methods and findings from the modeling report.

²² The justification for bypassing directly into Tributary 5 (as opposed to Tributary 4 [the Spillway Channel]) stems from agency consultations during a site visit held on October 13, 2010, with DFG, NMFS, the Division, and the Applicant's agent and consultants. This diversion plan was developed with and has subsequently been approved by both DFG and NMFS.

substantially increase the extent of the existing barrier to wildlife movement. Furthermore, the surrounding landscape to the north, east, and west is largely undeveloped, thus providing opportunities for wildlife to move around the vineyard. The impact on wildlife corridors from the past conversion of the 39 acres is considered 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 proposed project did not or does not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Therefore, 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?*

The proposed project did not and does not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, there is no impact.

6. AGRICULTURAL AND FOREST RESOURCES

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping & Monitoring Program of the California Resources Agency, to non-agricultural uses?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zones Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Regulatory Setting

Agriculture and agricultural production are prevalent land uses in Sonoma County. The Sonoma County General Plan (2008) designates the proposed project area as Resources and Rural Development. Permitted land uses in this category include agricultural production activities (Sonoma County 2008). Accordingly, the construction of the upper reservoir and conversion of 39 acres to vineyard were both consistent with the prevalent land uses in Sonoma County, as well as the permitted land uses that fall under the Resources and Rural Development land use designation.

The Agricultural Resources Element in the Sonoma County General Plan (2008) acknowledges the importance of agricultural production in and to Sonoma County:

The purpose of the element is to establish policies to insure the stability and productivity of the County's agricultural lands and industries. The element is intended to provide clear guidelines for decisions in agricultural areas. It is also intended to express policies, programs and measures that promote and protect the current and future needs of the agricultural industry. If future technology, and/or enterprises, of the agriculture industry require alternative and yet unforeseen policies and implementation mechanisms, those should be consistent with the County's commitment to encourage the maintenance of a healthy agriculture sector of the County's economy.

- 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 & Monitoring Program of the California Resources Agency, to non-agricultural uses?***

The proposed project did not result in the conversion of farmland to non-agricultural use. Accordingly, there is no impact.

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

The proposed project did not result in conflict with a Williamson Act contract. Accordingly, there is no impact.

- 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 zones Timberland Production (as defined by Government Code section 51104(g))?***

The construction of the upper reservoir in 2001 occurred in an area that had been cleared and graded by the previous owner following a wildfire that swept through the region in 1978. No trees were present at the time of construction. The conversion of 39 acres to vineyard occurred primarily on grasslands with some scattered oak woodland. The parcels are not located in an area zoned for timber production (Timberland Production Zone). Therefore, it did not conflict with existing zoning or cause rezoning of forest land. Accordingly, there is 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 did not result in the loss of forest land or conversion of forest land to non-forest use. Accordingly, there is 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?***

The proposed project did not 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. Accordingly, there is no impact.

7. NOISE

Would the project result in:

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

Regulatory Setting

The Sonoma County General Plan identifies agricultural operations as a potentially significant source of community noise in Sonoma County (Sonoma County 2008). Residences are located within approximately a 10-mile radius of the vineyard.

Findings

Impacts a through d

Construction activities associated with the construction of the upper reservoir and conversion of 39 acres to vineyard were short-term and occurred only during daylight hours. After construction of the proposed project, noise generated in the proposed project area is now consistent with routine agricultural activities and is similar to that already existing in the project vicinity. Impacts a through d are considered less than significant.

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

The proposed project area is not located near noise-sensitive areas, within an airport land use plan or where such a plan has not been adopted, or within 2 miles of an airport. Accordingly, there is no impact.

- f. ***For a project within the vicinity of a private airstrip, would the project expose people residing in or working in the project area to excessive noise levels?***

The proposed project area is not located within the vicinity of a private airstrip. Accordingly, there is no impact.

8. LAND USE AND PLANNING

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Regulatory Setting

Sonoma County General Plan

The proposed project area lies in the Cloverdale/Northeast County Planning Area identified in the Sonoma County General Plan (2008), located in the northeastern portion of the county. Dominant natural features of this planning area are the rugged Mendocino Highlands on the west and the Mayacamas Mountains on the east, which surround the fertile Russian River Valley, including Dry Creek and Alexander Valleys. The area is also rich in other resources, including streams, riparian zones, fish and wildlife habitat, geothermal steam, construction aggregates, and water for domestic and agricultural use. Lake Sonoma and the Russian River provide many recreation opportunities. Lands outside the valley floors are severely constrained and relatively inaccessible.

The Sonoma County General Plan Land Use Element (2008) and its policies guide growth and the development and use of land in Sonoma County through 2020. The Land Use Element of the general plan designates the proposed project area as Resources and Rural Development. Permitted land uses in this category include agricultural production activities (Sonoma County 2008). Accordingly, the construction of the upper reservoir and conversion of 39 acres to vineyard were both consistent with the permitted land uses that fall under the Resources and Rural Development land use designation. Furthermore, the construction of the proposed bypass facility at the lower reservoir that will be required to allow bypass flows is also consistent with the permitted land uses that fall under the Resources and Rural Development land use designation.

As stated below, the proposed project area is zoned in a Resources and Rural Development (Agricultural Preserve) District. The Sonoma County General Plan Land Use Element (2008) provides the following goals and objectives for the protection of agricultural land and preserves.

- **GOAL LU-9:** Protect lands currently in agricultural production and lands with soils and other characteristics, which make them potentially suitable for agricultural use. Retain large parcel sizes and avoid incompatible non-agricultural uses.
 - **Objective LU-9.1:** Avoid conversion of lands currently used for agricultural production to non-agricultural use.
 - **Objective LU-9.2:** Retain large parcels in agricultural production areas and avoid new parcels less than 20 acres in the "Land Intensive Agriculture" category.
 - **Objective LU-9.3:** Agricultural lands not currently used for farming but which have soils or other characteristics which make them suitable for farming shall not be developed in a way that would preclude future agricultural use.
 - **Objective LU-9.4:** Discourage uses in agricultural areas that are not compatible with long-term agricultural production.
 - **Objective LU-9.5:** Support farming by permitting limited small-scale farm services and visitor serving uses in agricultural areas.

Sonoma County Zoning Ordinance

The proposed project area is zoned in a Resources and Rural Development (Agricultural Preserve) District. The Sonoma County Zoning Ordinance (Sonoma County Permit and Resource Management Department 2010) describes the intent of the Resources and Rural Development (Agricultural Preserve) designation as follows:

To implement the provisions of the resources and rural development land use category (Section 2.8.1) of the general plan in a manner consistent with the provisions of Section 51200 et. seq. of the Government Code and the Land Conservation Act of 1965.

Uses related to the proposed project that are allowed within the Resources and Rural Development (Agricultural Preserve) designation, which do not require a use permit, include raising, feeding, maintaining and breeding of a certain amount of farm animals on 20,000 square feet of area and the outdoor growing and harvesting of shrubs, plants, flowers, trees, vines, fruits, vegetables, hay, grain, and similar food and fiber crops, including wholesale nurseries. Agricultural cultivation without a use permit is not permitted in the following areas:

- Within 100 feet from the top of the bank in the Russian River Riparian Corridor.
- Within 50 feet from the top of the bank in designated flatland riparian corridors.
- Within 25 feet from the top of the bank in designated upland riparian corridors.

Agricultural cultivation may be allowed within the setbacks upon approval of a management plan, which includes appropriate mitigation for potential erosion, bank stabilization, and biotic impacts. This plan may be approved by the director of the PRMD or by use permit pursuant to Section 26C-61(b)(3).

Sonoma County Tree Protection Ordinance

The Sonoma County Tree Protection Ordinance, Article 88, Section 26-88-010 (m) of the Sonoma County Zoning Ordinance, states that projects should be designed to minimize the destruction of protected trees. The section also states that agricultural cultivation is exempt from this requirement, including vineyards (Sonoma County Permit and Resource Management Department 2005); the proposed project is therefore exempt as it is for an agricultural use.

Sonoma County Vineyard Erosion and Sediment Control Ordinance

See the discussion of the Sonoma County VESCO in the Geology and Soils section. Development of the proposed project required compliance with the Sonoma County VESCO.

Findings

a. *Would the project physically divide an established community?*

The proposed project did not result in physical barriers that would divide an established community. Accordingly, there is no impact.

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

Adherence to the measures contained within the Sonoma County VESCO, discussed in the Geology and Soils section above, reduced potential soil erosion impacts to a less-than-significant level.

c. *Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?*

No habitat conservation plans or natural community conservation plans exist for the proposed project area. Accordingly, there is no impact.

9. ENERGY AND MINERAL RESOURCES

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Regulatory Setting

The State of California classifies mineral lands throughout the state and has designated certain mineral-bearing areas as being of regional significance. Local agencies must adopt mineral management policies that recognize mineral information provided by the state, assist in the management of land use that affects areas of statewide and regional significance, and emphasize the conservation and development of identified mineral deposits (Sonoma County 2008).

Various minerals have been mined in Sonoma County during the past century; however, aggregate products are now the dominant commercial minerals. Sonoma County has adopted the Aggregate Resources Management (ARM) plan for obtaining future supplies of aggregate material. This plan serves as the state-mandated mineral management policy for the county. During the process of adoption of the plan, Sonoma County considered the aggregate resource areas subsequently classified as MRZ-2 by the State Geologist (Sonoma County 2008). The proposed project area is not located in a mineral resource deposit area (Stinson et al. 1983).

Findings

Impacts a and b

No mineral resources are located near the proposed project area as mapped by either the Sonoma County General Plan (2008) or Stinson et al. (1983), and no impacts on mineral resources occurred as a result of the construction of the upper reservoir and conversion of 39 acres to vineyard. Accordingly, there are no impacts associated with impacts a and b.

10. HAZARDS and HAZARDOUS MATERIALS

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Findings

Impacts a and b

Hazardous materials used during construction of the upper reservoir and conversion of 39 acres to vineyard were limited to common petroleum and agricultural products (e.g., motor oil, fertilizer). When properly used, these products do not present a significant hazard. No spills occurred during construction of the upper reservoir and conversion of

39 acres to vineyard. Accordingly, there are no impacts associated with impacts a and b.

- c. *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?***

The proposed project is not located within 0.25 mile of any existing or proposed schools. Accordingly, there is 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 §65962.5 and, as a result, would it create a significant hazard to the public or to the environment?***

A search of the U.S Agency for Toxic Substances & Disease Registry (2011) and the California Department of Toxic Substances Control (2011) records did not reveal any known hazardous materials sites in the proposed project area; the proposed project area is not listed pursuant to Government Code §65962.5.

- 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 a public use airport, would the project result in a safety hazard for people residing or working in the project area?***

The proposed project is not located within an airport land use plan or where such a plan has not been adopted, or within two miles of a public airport or a public use airport. Accordingly, there is no impact.

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

The proposed project is not located within the vicinity of a private airstrip. Accordingly, there is no impact.

- g. *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?***

The proposed project does not include features that would interfere with an adopted emergency plan. Accordingly, there is no impact.

- h. *Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?***

The proposed project is located in a rural area that contains substantial fuels (e.g., grasses) that are susceptible to wildland fire. Although there was no impact, construction of the upper reservoir and conversion of 39 acres to vineyard introduced potential sources of fire. Equipment used during these activities may have created sparks, which could have ignited dry grass or other vegetation in the proposed project area. This risk, which is similar to that found at other rural construction sites, is considered to be a less-than-significant impact if standard safety precautions were

taken. Standard safety precautions were indeed taken and no fires occurred during the construction of the upper reservoir and conversion of 39 acres to vineyard. The only fire that has occurred on the Applicant's property is in the vicinity of the upper reservoir, where a wildfire occurred in 1978. Accordingly, there is no impact.

11. POPULATION AND HOUSING

Would the project:

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

Findings

Impact a through c

The proposed project did not and would not directly or indirectly induce substantial growth in the proposed project area and would not displace people or housing. The project did not and would not require an expanded permanent workforce that required or will require additional housing in the vicinity of the project. Accordingly, there are no impacts associated with impacts a through c.

12. TRANSPORTATION/CIRCULATION

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Exceed, either individually or cumulatively, a level-of-service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Findings

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

Vehicular access to the proposed project area is provided by Ida Clayton Road, a two-lane rural road in northern Sonoma County that is accessed from the east via Highway 128. Construction of the upper reservoir and conversion of 39 acres to vineyard caused a temporary and negligible increase in traffic as laborers and materials were transported to and from the project area. This increase was slight and did not represent a significant impact on transportation or circulation. This impact is considered less than significant.

Impacts b through g

No substantial new impediments to emergency access or incompatible uses occurred, and the project did not result in inadequate parking capacity or conflict with adopted alternative transportation policies, plans, or programs. There are no impacts associated with impacts b through g.

13. PUBLIC SERVICES

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

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Public services include fire and police protection, schools, parks, and other public facilities. The Sonoma Department of Emergency Services' Fire Division provides fire protection in the proposed project area. The Sonoma County Sheriff's Department provides police protection. The Calistoga Joint Unified School District provides K to 12th grade education to the proposed project area.

Findings

Impacts a through e

The construction of the upper reservoir and conversion of 39 acres to vineyard did not affect public services. The project did not and would not result in any adverse physical impacts associated with the provision of new or physically altered public facilities. The project would not create new residential areas or demand for schools, parks, or other public facilities. Accordingly, there are no impacts associated with impacts a through e.

14. UTILITIES AND SERVICE SYSTEMS

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Findings

Impacts a through g

The proposed project area is not served by public water and wastewater services. Residences in the proposed project area vicinity rely on private wells for domestic water supply and private septic systems for wastewater treatment. The proposed project area is equidistant from solid waste disposal and recycling sites located in both Healdsburg to the west and Calistoga to the south.

No additional wastewater, stormwater drainage, or landfill facilities were required as part of the construction of the upper reservoir and conversion of 39 acres to vineyard. Additional water supplies, such as connection to public water supply, were not and will not be required. Accordingly, there are no impacts associated with impacts a through g.

Refer to the discussion of potential water supply impacts in the Hydrology and Water Quality section for additional information.

15. AESTHETICS

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Findings

Impacts a and b

The proposed project area contains scenic resources characteristic of Sonoma County, including mountainous landscapes, agricultural and pastoral settings, and riparian areas. The existing agricultural use of the proposed project area is consistent with the rural aesthetic quality of the region, and there were no impacts with respect to adverse effects on a scenic vista or substantial damages to scenic resources as a result of the construction of the upper reservoir and conversion of 39 acres to vineyard.

c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

While the construction of the upper reservoir and conversion of 39 acres to vineyard may have degraded the existing visual character of the proposed project area, that use is consistent with the rural aesthetic quality of the region, and impacts are less than significant.

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

The construction of the upper reservoir and conversion of 39 acres to vineyard did not introduce a new source of substantial light or glare. Accordingly, there is no impact.

16. CULTURAL RESOURCES

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

This section documents the efforts made to identify cultural resources within the 39-acre portion of the POU that was developed post-baseline. Efforts to identify significant cultural resources within this 39-acre project area included background research at the Northwest Information Center (NWIC) of the California Historical Resources Information System at Sonoma State University, consultation with local Native American representatives, an intensive archaeological survey, and evaluation of a prehistoric resource.

On June 23, 2008, a records search of Peter Michael Winery's Home Ranch property was conducted at the California Historical Resources Information System's Northwest Information Center in Rohnert Park, California. The records search area also included a ¼-mile buffer around the Peter Michael Winery Home Ranch property. Records search results indicate that no cultural resources studies have been conducted within the property limit. Records search results also indicate that no previously recorded resources are located within the property limit. One cultural resources study has been conducted within ¼ mile of the property limit (Storey 1998). No cultural resources have been recorded within ¼ mile of the property limit, although Storey (1988) recorded six historic-era resources within ½ mile of the property limit.

On June 17, 2008, the California Native American Heritage Commission (NAHC) was contacted by fax. The letter included a brief project description, the legal location of the project, and a request for a search of the sacred lands file. The letter also requested a list of local Native American contacts that may have information regarding cultural resources in the project area vicinity. The NAHC responded by fax on June 19, 2008. The response letter indicated that the sacred lands file search was negative. The letter

also included contact information for 10 Native American groups or representatives. Letters were sent to each Native American group or individual with attached project area maps. Letters included a brief project description, location information, and a request to share any information or concerns they may have regarding cultural resources within the project area vicinity. Upon review of Native American consultation status by a State Water Board archaeologist, it was recommended that the NAHC be contacted once more with a request for contact information for individuals or groups associated with the Wappo tribe. The State Water Board contacted the NAHC on October 9, 2008, by email with a request for this information. The NAHC responded by fax on October 9, 2008, with a list of three individuals associated with the Wappo tribe. On October 13, 2008, letters with attached project area maps were sent to all three Wappo-affiliated representatives. Follow-up telephone calls were made to all three contacts on December 16, 2008. No response was received.

An intensive pedestrian survey of the project area was conducted on March 13, 2008, and October 20 and 21, 2008. The survey covered a total of 39 acres of property that included the entire post-1998 POU as well as a 30-meter swath around the perimeter of the upper reservoir. Transects were spaced no more than 15 meters apart in order to ensure maximum coverage in a timely manner. Transects generally followed vineyard rows within the vineyard areas, and non-vineyard areas were subjected to east/west trending sweeps. Ground visibility was good to excellent as a result of ground disturbance from ongoing agricultural activities.

An intensive pedestrian survey of the lower reservoir perimeter was conducted on September 29, 2011, to comply with Section 106 of the National Historic Preservation Act in support of an NWP application to be submitted to the USACE for installation of a bypass facility. The survey achieved 100% coverage, and ground visibility was generally excellent (80–100%).

PMW-Cul-01

One archaeological resource was identified as a result of the survey. This resource (PMW-Cul-01) is a prehistoric lithic scatter located on the margin of a vineyard. The site consists of at least 50 obsidian flakes, two formal tools (biface fragments), and two areas of dark soil that could represent potential midden deposits. The site appears to have been highly disturbed as a result of vineyard, gravel perimeter road, and storm drain installation as well as regular vineyard and road maintenance. The site is approximately 60 meters north to south and 25 meters west to east; some of this dispersal could be a result of cultural material being spread around during vineyard maintenance.

Testing and Evaluation of PMW-Cul-01

In order to evaluate PMW-Cul-01 for significance under CEQA, a subsurface testing program was implemented. Between June 15 and 17, 2010, ICF archaeologists and Wappo tribe representative Vince Salsedo conducted surface collection and hand

excavation within and adjacent to the site boundary. Goals of the testing program included characterization of the site, level of disturbance due to vineyard installation and maintenance, and significance of the site according to State CEQA Guidelines. Information gathered from test excavation of this site failed to contribute any new or meaningful information to knowledge of the region's prehistory. Because of this, the site was determined to be insignificant under State CEQA Guidelines (ICF 2010).

Paleontological Resources

For paleontological resources, a records search of the University of California's Museum of Paleontology's (UCMP's) database was conducted. The surficial geologic unit in the 39-acre project area is mapped as the Franciscan Complex, which is of Upper Jurassic to Cretaceous age (Wagner and Bortugno 1982). There are no records of vertebrate fossils of either the Franciscan Complex or Upper Jurassic to Cretaceous age in Sonoma County (University of California, Berkeley Museum of Paleontology 2011a). However, the UCMP database does contain records of vertebrate fossils, such as ichthyosaur and plesiosaurus, in the Franciscan Complex in other counties (University of California, Berkeley Museum of Paleontology 2011b). The unit therefore has the potential to contain vertebrate fossils because, unlike archaeological sites, paleontological sites are defined by the entire extent (both areal and stratigraphic) of a unit or formation. In other words, once a unit is identified as containing vertebrate fossils or other rare fossils, the entire unit is a paleontological site (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 2011).

The soils overlying the Franciscan Complex are Holocene in age and therefore unlikely to contain fossils. The depth of these soils is unknown. In addition, the area has been disturbed by grading and agricultural discing.

Findings

Impacts a and b

No significant historical resources have been affected by the project as it is currently proposed in Application 30745. There is always the possibility that buried archeological deposits could be present and accidental discovery could occur during ground disturbance. The following permit term, substantially as written, pursuant to State CEQA Guidelines 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction," will be included in any permit or license issued pursuant to Application 30745:

- Should any buried archeological materials be uncovered during project activities, such activities shall cease within 100 feet 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; 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 Permittee 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 feet of the find until all approved mitigation measures have been completed to the satisfaction of the Deputy Director for Water Rights.

c. *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Paleontological resources could be present in the proposed project area because the Franciscan Complex is known to contain vertebrate fossils. However, project activities during vineyard conversion did not disturb more than the upper 18 inches of soil. As such, vertebrate fossils were most likely not disturbed (if present) because earthmoving activities were not deep enough to reach the Franciscan Complex. The severity of impact would have been directly related to the abundance and quality of materials present, if any; and the extent of disturbance and loss. Implementation of the permit term below would reduce this impact to a less-than-significant level.

- If vertebrate fossils are discovered during project activities, all work shall cease within 100 feet of the find until a qualified professional paleontologist as defined by the Society of Vertebrate Paleontology's Conformable Impact Mitigation Guidelines Committee (2011) can assess the nature and importance of the find and recommend appropriate treatment. The Division will also be notified of the discovery and the qualified professional paleontologist's opinion within 48 hours of the initial finding. Treatment may include preparation and recovery of fossil materials, so that they can be housed in an appropriate museum or university collection, and also may include preparation of a report for publication describing the finds. Project activities shall not resume until after the qualified professional paleontologist has given clearance and evidence of such clearance has been submitted to the Division.

d. *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

If any discovery includes human remains, CEQA Guidelines 15064.5 (e)(1) and California Health and Safety Code section 7050.5 shall be followed. Consultation with a local coroner and Native Americans shall occur. The county coroner is required to examine all discoveries of human remains within 48 hours of the notification. To address this issue, a permit term, substantially as follows, shall be included in any permit or license issued pursuant to Application 30745:

- If human remains are encountered, the Permittee shall comply with Section 15064.5 (e) (1) of the State CEQA Guidelines and the Health and Safety Code Section 7050.5. All project-related ground disturbance within 100 feet 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.

17. RECREATION

Would the project:

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Sonoma County has various types of parklands, including federal recreation areas and state parks, regional parks, community parks, and neighborhood parks. Recreational opportunities include fishing, camping, swimming, picnicking, horseback riding, bicycling, hiking, and walking.

Findings

Impacts a and b

The construction of the upper reservoir and conversion of 39 acres to vineyard did not increase or would 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. Past and proposed project activities do not include recreation facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

18. MANDATORY FINDINGS OF SIGNIFICANCE.

Would the project:

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

As discussed in the preceding sections, the construction of the upper reservoir and conversion of 39 acres to vineyard, as well as the seasonal diversion to storage of up to 85 af of water, had or would have potential to degrade the quality of the environment by adversely affecting geology and soils, hydrology and water quality, biological resources, and cultural resources.

However, with implementation of the identified permit terms and other environmental commitments, potential impacts would be reduced to a less-than-significant level.

As outlined in the preceding sections, the proposed project has potential to result in adverse environmental impacts. These impacts in combination with the impacts of other past, present, and future projects could contribute to cumulatively significant effects on the environment. However, with implementation of the identified permit terms, the proposed project would avoid or minimize potential impacts and would not result in cumulatively considerable environmental impacts.

As discussed in the preceding sections, the proposed project has potential to result in adverse direct or indirect effects on human beings. However, with implementation of the identified permit terms, the proposed project would not result in substantial adverse

direct or indirect effects on human beings, and impacts would be considered less than significant.

III. 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"/>

Prepared By:

Jeff Peters
ICF International Original Signed By JPeters Date JUN 11 2012

Reviewed By:

Beth Payne
Environmental Scientist Original Signed By BPayne Date JUN 13 2012

Katy Lee, Chief
Russian River Watershed Unit Original Signed By KLee Date JUN 19 2012

Phillip Crader, Manager
Permitting and Licensing Section
Division of Water Rights Original Signed By PCrader Date JUN 20 2012

(Form updated 4/28/04)

Authority: Public Resources Code Sections 21083, 21084, 21084.1, and 21087.

Reference: Public Resources Code Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.1 through 21083.3, 21083.6 through 21083.9, 21084.1, 21093, 21094, 21151; *Sundstrom v. County of Mendocino*, 202 Cal. App. 3d 296 (1988); *Leonoff v. Monterey Board of Supervisors*, 222 Cal. App. 3d 1337 (1990).

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